Governance in International Livestock Research

The Case of ILRI & CGIAR, 1974-2020

Lindsay Falvey

ILRI

Governance of organizations is less studied than management, yet is a key determinant of strategic vision and direction, oversight and values. An organization's Board selects, appoints and monitors Management with which it must maintain a productive interaction with both parties understanding their different roles. International research institutions funded by variable contributions from wealthy national governments and philanthropic bodies have specific governance requirements. Neither governmental nor UN-style bodies offer prescriptions for the expertise and complexity of such legally constituted specialist organizations. In the case of such organizations as the International Livestock Research Institute within the CGIAR association, governance has been shared across different persons, bodies and forces. The sharing of such critical responsibilities worked productively when trust was high and funding was approximately aligned to the influence of the sharing parties, but otherwise it risked anomalies of imbalance between authority and responsibilities that prejudiced impact. The book traces the governance systems of ILRI across five decades of international livestock research as a case study of historical interest that can inform future structures in the international research arena.

Lindsay Falvey is an Emeritus Fellow of ILRI and Emeritus Professor of Agriculture at the University of Melbourne; he was previously Chair of the ILRI Board.

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

CGIAR

Governance in International Livestock Research

The Case of ILRI & CGIAR, 1974-2020

Lindsay Falvey

Published by the International Livestock Research Institute (ILRI), 2021. The author's opinions do not necessarily reflect the views of ILRI.

ISBN: 978-0-9751000-8-0 *pdf version available free online*

Catalogue Information:
Title: Governance in International Livestock Research : The Case of ILRI & CGIAR, 1974-2020.
Author: Lindsay Falvey, 1950-, (author.)
Publisher: International Livestock Research Institute
Summary: Governance of organizations is less studied than management, yet is a key determinant of strategic vision and direction, oversight and values. An organization's Board selects, appoints and monitors Management with which it must maintain a productive interaction with both parties understanding their different roles. International research institutions funded by variable contributions from wealthy national governments and philanthropic bodies have specific governance requirements. Neither governmental nor UN-style bodies offer prescriptions for the expertise and complexity of such legally constituted specialist organizations. In the case of such organizations as the International Livestock Research Institute within the CGIAR association, governance has been shared across different persons, bodies and forces. The sharing of such critical responsibilities worked productively when trust was high and funding was approximately aligned to the influence of the sharing parties, but otherwise it risked anomalies of imbalance between authority and responsibilities that prejudiced impact. The book traces the governance systems of ILRI across five decades of international livestock research as a case study of historical interest that can inform future structures in the international research arena.
Content Types: text
Carrier Types: online resource volume
Physical Description: 1 online resource.1 volume.
Notes: Prepublication record
(machine generated from publisher information)
Language: English
Identifiers: ISBN 9780975100080
Libraries Australia ID: 69438742, 69438740
Contributed by: Libraries Australia

NATIONAL LIBRARY OF AUSTRALIA

Table of Contents

Acknowledgements

As I have outlined in other works, this section of a book should not only acknowledge the persons that have influenced the work, but also the other influences on an author that might allow a reader to discern a work's perspective or bias.

Influencers: Countless colleagues have contributed to this volume through comments, discussions and documents over several years. I especially thank Jimmy Smith and Derek Byerlee for their critiques of an early draft, ILRI Patron, Peter Doherty for his encouragement and generous Foreword, and my wife Simone Falvey-Behr for detailed proof-reading. Of the many others I can here only name a few, in particular those who have served with me on the ILRI Board, including; Lorne Babiuk, Rodney Cooke, Li Lin Foo, Gebregziabher Gebreyohannes, Richard Golding, Martyn Jeggo, Harry Kimtai, Judith Lungu, Cheikh Ly, Wondirad Mandefro, Elsa Murano, Chanda Nimbkar, Susanne Petersen, Fikru Regassa, Lindiwe Sibanda, Dieter Schillinger, Andrew Tuimur, Siew Fing Wong, Khatijah Yusoff and Jing Zhu – and notably (again) Jimmy Smith and Shirley Tarawali. ILRI Library staff in Addis Ababa and Nairobi together with Terry Muindi responded quickly under pandemic conditions to provide historic minutes of Board meetings and review reports as well as photographs of ILRI Chairs and Directors-General, which Brian Perry kindly supplemented and clarified. In addition, my understanding has been variously aided across the decades by: my Thai friend and colleague Charan Chantalakhana, CGIAR Centre Board Chairs and Directors-General, fellow Australian CALG members including ACIAR representatives, other colleagues within CGIAR Centres including members of the 2006 ILRI EPMR Panel and the Chair and Director-General of that time, Uwe Werblow and Carlos Seré, as well as late colleagues Christian Bonte-Friedheim, John Dillon and Derek Tribe. I thank all, and the many others who have engaged with me over the years on this nebulous subject.

I also acknowledge the many authors who have also tried to understand the unnecessary complexities of CGIAR that have nevertheless produced the exceptional impact of international livestock and other agriculture research. Many documents from which I have drawn information and viewpoints are listed in the endnotes.

Influences: Direct influences on me that are relevant to the subject of ILRI governance and CGIAR include: declining to consider a role at ILCA in the 1970s; attending several International Centres Weeks in the 1980s and 1990s under the auspices of the Crawford Fund for International Agricultural Research; a brief 2000s interaction about the CGIAR Alliance, and conducting a review of ISNAR training; chairing an EPMR of ILRI in 2004-5, and serving on and chairing the ILRI Board for eight years from 2013. My introduction to the early Green Revolution was in church and undergraduate studies in agricultural science, which led to pursuing experience in tropical agriculture and livestock before and after graduation and consequently working in international agriculture for more than 45 years. Such experiences lead me to agree that the intent of the early major CGIAR Centres remains as relevant today as 50 years ago. Ensuring reliable nutritious food remains the first step in development, without which other laudable investments such as education are compromised. I see this as an overriding ethical responsibility; so do many of those who apply their knowledge in the Centres as a true vocation. In a period when multiple 'crises' claim attention, it is important to address such basic issues ahead of political or hegemonic ends.

I consider that independent legal Centres such as ILRI are best governed by the conventional mores determined from long experience wider than CGIAR. This realization is based on observations of the remedial actions taken by Centres when circumstances change dramatically, and is supplemented by experience as Dean merging and reorganizing a very large Faculty in an advanced university, and on boards of various organisations including a major international agricultural company. Such experience leads me to see risks in such trends as: widening mandates of elite research bodies; remote governance, complex organisational arrangements; multiple and inconstant objectives, and planning separated from secure funding and intended beneficiaries. I acknowledge that these views may not be those of the mainstream.

Lindsay Falvey
Moranding, 2021

Among the diverse disciplines of animal science, ethology examines evolutionary adaptive traits of behaviour and reveals enduring systems of hierarchies for groups of animals. Pride that privileges consciousness can preclude humans from acknowledging their inherent animality and cause them to invent intellectually entertaining structures that ignore inherent traits. Trial and error over millennia has shown the corporation to be an enduring means of cooperation within human groups to productively channel hierarchical traits into separate responsibilities. The spirit, mind and body of the corporate being maintains its adaptive life through the separate interrelated functions of governance, management and implementation.

N.N.

Why Livestock Research Matters:

- Livestock GDP is about 40 percent of global agricultural GDP
- It would be higher if social collateral was included
- A billion people get essential nutrients only from livestock
- Cultural bonds to livestock affect adoption of innovations
- Milk and meat = 5 of the 6 most valuable food commodities
- Animal product demand is rising faster than for other foods
- Half of the world's crops rely on livestock in farming systems
- 25 - 40 % of nitrogen is provided by livestock in mixed farms
- Animal power is sometimes more efficient than machines
- Methane emissions can be reduced by production efficiencies
- Environments benefit from production efficiencies
- Animal to human disease transfers are reduced by research
- Livestock research returns on investment exceed 10:1

Acronyms

BAC, Board Advisory Committee
BecA, Biosciences Eastern and Central Africa
BMGF, Bill and Melinda Gates Foundation
CGIAR, Consultative Group for International Agricultural Research
CIAT, Centro Internacional de Agricultura Tropical
CIP, Centro Internacional de la Papa
CIRL, Centre for International Research on Livestock (aka ILRI)
CRP, CGIAR Research Project
CSIRO, Commonwealth Scientific and Industrial Research Organisation of Australia
CYMMIT, Centro Internacional de Mejoramiento de Maíz y Trigo
EMT, Executive Management Team
FAO, Food and Agriculture Organisation of the UN
ICIPE, International Centre of Insect Physiology and Ecology
ICOMOD, International Centre for Integrated Mountain Development
ICRAF, International Centre for Research in AgroForestry
ICRISAT, International Crops Research Institute for the Semi-Arid Tropics
ICW, International Centres' Week
IFPRI, International Food Policy Research Institute
IITA, International Institute of Tropical Agriculture
ILCA, International Livestock Centre for Africa
ILRAD, International Laboratory for Research on Animal Diseases
ILRI, International Livestock Research Institute
IMF, International Monetary Fund
IPGRI, International Plant Genetics Resources Institute
IPMS, Improving Productivity and Market Success (of Ethiopian Farmers)
IRRI, International Rice Research Institute
ISNAR, International Service for National Agriculture Research
ISPC, Independent Science and Partnership Council
IWMI, International Water Management Institute
NARS, National Agricultural Research Systems
NGO, Non-government Organisation
OECD, Organisation for Economic Co-operation and Development
SB, System Board
SLI, Systemwide Livestock Initiative
SLO, System Level Outcomes
SLP, Systemwide Livestock Program
SMB, System Management Board
SWEP, System-Wide and Ecoregional Programs
TAC, Technical Advisory Committee
UN, United Nations
UNDP, United Nations Development Program
USDA, United States Department of Agriculture

Patron's Foreword

As Patron of ILRI, I am pleased to introduce this examination of governance in the international livestock research centres. Governance is a neglected subject and those of us who know the research field from our particular specialties tend to assume that the right people for the task will somehow arise from within our ranks. Fortunately this has often occurred, and when it works well it is most easily overlooked.

In the international arena that is reliant on government and philanthropic donations in a system somewhat like the United Nations, continuity of funds for long term research projects requires skilled management. The interaction between management and governance of legally constituted bodies such as ILRI must be productive. Again, this interaction can be easily overlooked.

From my own experience on the Board of one of ILRI's earlier iterations, ILRAD, I know that it is tempting for a board member to follow interesting research detail, especially in one's own field. Keeping a board focussed on its governance tasks is thus a consistent theme across the world's most impactful research institutes.

This publication brings an unusual glimpse of the challenges that arise in the international research sector, and in particular ILRI and the ever changing group called CGIAR. Most of us are experienced in national institutions such as autonomous universities or government research organisations where international research is simply

assumed to be the routine collaboration we have with our colleagues around the world. That assumption is incomplete for organisations such as ILRI that are legal entities and as such may well be increasingly scrutinized under corporate law, especially as they source more funds from and join with private bodies.

For these and other reasons, I commend this work to those who may not have understood this part of the jigsaw that allows institutes such as ILRI to produce extremely high rates of return, to alleviate nutritional and disease suffering for millions and to reduce the environmental impacts of essential agricultural production.

Peter C. Doherty AC, FAA, FRS
Nobel Laureate, 1996
Patron, International Livestock Research Institute (ILRI)

Governance in International Livestock Research

Introduction

Governance has different meanings to different people. Derived from the Greek verb 'to steer', governance in the sense used in this work came into popular usage from the 1990s – a factor that from today's perspective is important in understanding what may appear as dilettante attitudes to the processes of decision-making, accountability and control within CGIAR across its early decades. For example, in those early decades, Centre Boards met only once per year and otherwise relied on mail and telex for communication; they were mainly concerned with the research portfolio and periodically with the appointment of the Director-General. Through that earlier period governance for parties from national governments and international bodies meant a mix of politics and administration while those from the corporate sector of most OECD countries saw governance as referring to the Board as the ultimate body of a legally constituted organisation. In the CGIAR Centres the contrast has become particularly apparent in recent years as some Centre Boards increasingly assumed a corporate governance approach in response to their Centre's complexities of funding, accountability, compliance and strategic direction. At the same time, public sector parties sought to retain influence in these areas of governance. In this work, the term 'governance' is consistently employed in its more recent sense in order to make the historical perspective more useful to future governance, as well to management and administration.

Specialized multilateral research bodies serving the needs of developing nations are rare and poorly understood. This applies to the larger international agricultural research Centres, which conduct high level research, often in conjunction with the world's most advanced universities and national research institutions.

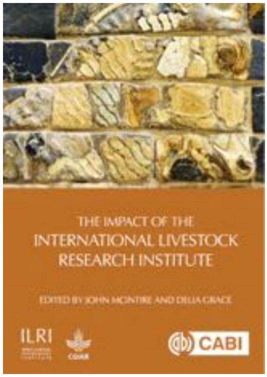
The linkages include; joint research, staff interchanges, shared facilities and scientific communication that combine in a dynamic system. It would be appropriate to refer to that interaction as 'the system' because the exceptional impacts of research from a Centre result from these integral relationships. However, in that international world these relationships are more commonly subordinated by the term 'partnership' while the term 'System' is used to refer to the association of the Centres and donors. This book therefore conforms to that jargon and uses 'System' to refer to the five decades of mechanisms for inter-centre and donor interaction – a group known as CGIAR.

Originally an acronym of the Consultative Group for International Agricultural Research, the term 'Consultative Group' derived from the World Bank's convening and coordinating of donors. It "was not a legal entity; it had no funds of its own. It was highly informal with decisions depending on rulings of consensus, as determined by the chairman. The World Bank provided the secretariat and the chair, who was always a Bank vice president with agriculture in his or her portfolio."[1] In recent years CGIAR has become more a brand that an acronym, and is currently poised to rebrand. Since the 1974 inception of the System's livestock research, the Centre now known as the International Livestock Research Institute (ILRI) has been one of the larger independent legal entities grouped in the CGIAR System.

This book deals with aspects of ILRI governance and as a consequence of that theme, the CGIAR itself. It is based on the premise that governance, management and administration of independently constituted research Centres serve the primary research function. Among other routine functions of governance are approval, oversight and monitoring of policies, budgets and processes and appointment and evaluation of the CEO to whom it delegates Management functions. Governing bodies also provide a shield from forces that threaten the quality or direction of research. Recognizing that prescriptive governance can compromise Board operations,[2] this discussion adopts the

preferred approach of basic operational tools being adapted to specific governance needs.[3] Within this general framework, the following discussion traces various governance approaches that have influenced ILRI from the formation of its predecessor Centres ILCA and ILRAD until the present time – that is, a period from the 1970s to 2020.

The analysis aims to inform those concerned with governance and management of high level research organisations that rely on complex funding arrangements. It may be viewed as a case study of one research institution, ILRI, or as an institutional history of governance. For those concerned with international livestock research it provides explanations for the occasionally irrational changes in policy as well as an indication of the evolution of the governance roles over recent decades. To cater for each such audience, chapters conclude with a Box that encapsulates major points that are later integrated in the final chapter. While past events are not necessarily reliable guides for future actions, repetitive actions across the decades can be an indicator of future reactions that can compromise high-level long-term research. There is an omnipresent risk that institutional reform can divert decision-making and budget away from focussed research by creating administrative overheads and spreading reduced field activities across multiple objectives that extend beyond the legally expressed intent of Centre charters. In the current ongoing reformation, the continued impact of international agricultural research relies on there being no drifts in emphasis from the field to the office, or from less-developed to more-developed-country head (and home) offices. It also relies on Centres such as ILRI continuing to attract committed high-level scientists who focus on improving the lot of the billions whose future relies on sound research and its impacts.



The purpose of the analysis is to seek governance lessons as part of the constant vigilance essential for maximizing the efficiency of livestock research. Such constant vigilance is the price of liberating the world's marginalized people from intellectual and physical stunting and essential poverty while minimizing negative environmental impacts. As the work is limited to aspects of governance, it is a type of institutional history as well as a governance case study. It does not detail the astounding benefits derived from ILRI's research, which have been masterfully collated in another publication, 'The Impact of the International Livestock Research Institute'.[4] Good governance of a Centre like ILRI enhances such impact – and governing well in that complex multinational environment is its own special field.

Chapter 1

International Livestock Research: Origins and Context

Successful businesses rely on competent staff, management and governance. The last factor is often overlooked or even confused with management. This applies to commercial enterprises, non-profit organisations and government enterprises, which are usually required to be legally constituted entities (persons) in most advanced nations. Overseas development assistance from wealthy to poor nations, a significant proportion of which has been invested in agricultural development, is implemented by such registered entities as consulting companies, NGOs and contractual bodies of international organisations such as the UN. Agricultural research that discovers long-term benefits while minimizing unwanted contingencies is implemented through the legal personas of the international agricultural research Centres. One of these Centres which has produced outstanding benefits is today known as ILRI; it is clearly successful, and as such has relied on competent albeit convoluted governance, as is examined in this work. Before considering governance arrangements over ILRI's five decades in the succeeding chapters, this chapter introduces the context and origin of the International Livestock Research Institute, ILRI.

International Livestock Research

Livestock research in the service of less developed nations is much more essential to any sustained improvement in global wellbeing than is commonly realized. It is a diverse and complex field that has required increasingly sophisticated management and governance. International livestock research has been supported by various agencies and national governments over the past five decades for which an investment of $2 billion probably

underestimates true allocations. The research has been conducted by, in association with, or in parallel with, the International Livestock Research Institute (ILRI) even though the majority of its focus has been on sub-Saharan Africa.[5] The research was initially founded on two general premises, the need for improved human nutrition as population was rising quickly, and the assumption that constraints to improved livestock productivity were readily researchable, particularly in the case of trypanosomiasis. In creating two international livestock research Centres in 1974, it was also assumed that research on livestock, in particular domestic ruminants, would result in early successes akin to those achieved through rice and wheat breeding.

International livestock research was known to be more complicated than that of the cereals, and while its criticality to international development was known from colonial times, it was not universally understood among agricultural administrators in wealthy nations. Misunderstanding has persisted when organisational assumptions seek to align livestock research approaches with those of crops – even when separate livestock species are treated as individual crops. That treatment can overlook such critical differences as; complex rumen biochemistry and genetics, interactions between animals and humans including diseases, environmental interactions, diverse lifetime and end-of-life products, self-reproduction, traction, mobility and insurance.

Working with this wide complex of interactions, research aims to assist around two billion marginalized persons that remain reliant on livestock for their nutritional wellbeing and income. Without essential nutrients that are only available from animal products for these people, physical stunting and impaired brain development in addition to hunger itself highlight continuing global moral issues that if left unaddressed compromise otherwise well-meaning development innovations. Balanced against such moral and development imperatives, livestock are implicated in environmental costs including greenhouse gas

contributions – and these provide additional research themes, many of which are addressed by increasing livestock productivity. In addition, the sector is far larger than usually credited.

The livestock sector constitutes around 40 percent of global agricultural GDP, a figure that would be even higher if social collateral was included in economic calculations. In purely financial terms animal products (milk, and meat from ruminants, pigs, chickens and fish) represent five of the six most valuable food commodities; rice is the only crop in the top six. Demand for animal products continues to rise more steeply than that for other food sources, notably crops – and at least half of the world's crops rely on livestock within the farming system.[6] In crop-livestock production systems, between 25 and 40 percent of nitrogen, the most critical nutrient for crop production, is provided by livestock.[7] Ploughing by millions of cattle and other animal power continues to be widely practiced in the developing world with significant nutrient-cycling benefits that render it locally more efficient than other management systems.[8]

Among the 750 million smallholder livestock keepers, some will continue traditional productions systems into the foreseeable future, thereby necessitating research to improve efficiencies within those systems. For the others, perhaps a third of smallholder livestock keepers will become more market oriented while another third elect to move to other occupations. Thus the number of smallholders may reduce, but uninformed claims that they will disappear are gross extrapolations that risk further marginalisation of hundreds of millions. Such ideas seem to arise from privileged positions remote from smallholder livestock keepers and farmers.

Popular mindsets in wealthy nations can actually negate improvements to the wellbeing of marginalized peoples in poor nations. Suggestions false to these regions that livestock use crop lands, contribute uniformly to greenhouse gases and that their food products are unhealthy can influence some donor

governments, in Europe for instance, to reconsider their commitments to international livestock research. A more informed understanding reveals, for example: the unique role of livestock in the wellbeing of millions of people; that vegetarianism as a choice relies on living in a wealthy nation; that ruminants consume forage on lands that are not suitable for crops, and that improved productivity per animal leads to less methane production per unit of food product.[9] This nexus of misinformation, populist politics and continuing great need for elite research is the realm of ILRI.

Originating in 1974 as two international research Centres – the International Livestock Centre for Africa (ILCA) and the International Laboratory for Research on Animal Diseases (ILRAD) – ILRI has increased the wellbeing of hundreds of millions of poor and compromised lives. The impact of its research over 45 years has recently been analysed in detail that reveals significant contributions to livestock genetics, tsetse and trypanosomiasis control, immunology and immuno-parasitology, epidemiology, transboundary diseases, zoonoses, food safety and nutrition, tick control, rangeland ecology, forage conservation and use, integrated crop improvement, livestock and climate, policy and gender.[10] To achieve such impact has relied on outstanding science and scientists across pure, technological, social and environmental fields. It has also relied on clearheaded management. Oversighting and guiding such management and research has relied on functional governance, which while unconventional has been conducted as responsibly as the System allowed across five decades.

The chapters of this book trace governance in five year tranches to elicit critical elements in the unique field of international livestock research. To do so it is first necessary to briefly amplify the context of the formation and operations of ILRI, as one of the 'green revolution' research Centres in 'the System' of CGIAR.

CGIAR

A leading CGIAR figure for many years described CGIAR as a "a virtual entity – which was, in reality, nothing more than an informal forum facilitated by the World Bank – where three independent pillars of the system could meet: (1) independent centers with their own Boards of Trustees; (2) independent donors, who could give directly to their center of choice (no pooling of funds); and (3) independent technical advice from a Technical Advisory Committee (TAC) made up of global scientific experts."[11]

In seeking to review the history of CGIAR, that description has recently been amplified by a Cambridge historian who describes it as an "ad-hoc consortium of national governments, foreign aid agencies, philanthropies, UN agencies, and international financial institutions [that] aimed to continue momentum of the Green Revolution through international agricultural research centers staffed by international researchers guided by a Technical Advisory Committee (TAC) of high level scientists who would liaise with CGIAR donors".

The first description implies the primary governance role of Centre Boards benefiting from technical advice from TAC while the second description might cause a reader to conclude that TAC assumed Centre governance roles by 'guiding' them. This unintended difference provides a useful means of questioning the role of the CGIAR in the governance of a Centre such as ILRI. Yet "histories of twentieth century agriculture and international development make frequent reference to CGIAR research centers, especially the most prominent of these, and occasionally to CGIAR itself".[12] One means of summarizing its origins and influence is through the emergence of the early international agricultural research Centres, which informed reviewers have suggested were the 20th century's major institutional support for agricultural research for development and food security.[13] Ignoring the geopolitical context, which is summarily presented in Appendix 1,

the creation of the Food and Agriculture Organisation of the UN (FAO) is a convenient starting point.

Post-war agricultural scientific advances, particularly those in the USA were a significant stimulus for the 1945 establishment of FAO in Washington DC near the Department of Agriculture (USDA), which would supply much of its first staff. Notwithstanding its espoused functions,[14] FAO seems to have interpreted its mission as bringing "decades of experience from the USDA to the rest of the world",[15] particularly in crop improvement. By the 1960s, experience in agricultural development led to proposals for elite research Centres to adapt, generate and transfer knowledge in support of development and the creation of national research capabilities.

The vision was funded by wealthy nations who agreed that the Centres should each be founded as autonomous, not-for-profit, non-governmental organisations with internationally sourced independent governing boards. Such autonomous self-government of the entities was to avoid uninformed impingement on science, as Centres built on extant colonial and FAO research networks.[16] Thus an FAO rice network in Asia emerged as the International Rice Research Institute (IRRI) in 1960. In the case of wheat, post-colonial research collaboration developed into a regional grouping for maize and wheat centred in Mexico that was to become the International Maize and Wheat Improvement Center (CYMMIT) in 1963. The Rockefeller and Ford foundations were important contributors to these initial Centres although they were less prominent in the creation of next two Centres that had regional foci, the International Center for Tropical Agriculture (CIAT) in Colombia and the International Institute for Tropical Agriculture (IITA) in Nigeria.

Both CIAT and IITA were initially slated to include livestock research, which quickly reduced to studying perennial forage legumes that enhanced soil nitrogen for crops. Meanwhile, late 1960's discussions about constraints in African livestock had

advanced to the stage of suggesting the creation of an international livestock research centre.[17] At the same time, in 1969, the idea of a 'consultative group'[18] was being advanced by the Rockefeller and Ford foundations and USAID, which together fostered meetings in Bellagio that brought the World Bank to support international agricultural research. Thus in 1971, the four above mentioned Centres and discussions for creating one or two livestock research Centres became the business of the 'ad hoc consortium' that was henceforth known as the CGIAR. From the outset, the strongest influences in CGIAR were from the US and British Commonwealth. France, with its significant West African connections preferred to support its colonial network of research stations and "debated whether to actively oppose the creation of the CGIAR or look for ways to cooperate. Not until 1974, did France make a small financial contribution to the CGIAR."[19] The livestock Centres were to be based in East Africa and so were constrained from the outset by what would later become known as 'donor politics'.

The concurrent conception of livestock Centres with the creation of the CGIAR to coordinate the development of those Centres makes ILCA and ILRAD the first product of the 'ad hoc' group. This special status and the continued role of CGIAR and its agent TAC in overseeing and guiding Centres, requires CGIAR to be considered in the analysis of livestock Centres' governance.

Conceiving the Livestock Centres

The International Laboratory for Research on Animal Diseases (ILRAD) was created in 1974 to continue work on a vaccine for East Coast fever and trypanosomiasis. Simultaneously, the need for broad production research to complement the focus of ILRAD led to the establishment of the International Livestock Centre for Africa (ILCA). ILRAD more than ILCA built on the British colonial systems with its significant research investment in East Africa, which favoured a concentration of researchers and sophisticated

research equipment linked to elite research centres in Britain.[20] Earlier work had confirmed the nutrient cycling efficiency of integrated livestock and crop production, the most important farming system for nourishing the rising East African population.[21]

Britain had supported the East African Veterinary Research Organisation in Muguga Kenya and the West African Institute for Trypanosomiasis in Kaduna Nigeria although its contributions reduced as nations moved towards independence. Building on this experience, "a US Presidential Panel on the World Food Supply recommended the establishment of international centres for research on animal production and diseases in the humid and arid tropics, with at least one centre devoted primarily to research on epizootic diseases".[22] Further deliberations involving the Rockefeller and Ford foundations produced a recommendation to create another centre focussed on rangelands, which soon morphed towards smallholder mixed farms that included ruminants.

The principal catalyst for the formation of both ILCA and ILRAD was the Rockefeller Foundation, which sponsored meetings, studies and tortuous negotiations with host governments. The resultant proposal was for a single centre based in Kenya to operate in conjunction with existing national research stations with multidisciplinary livestock production research conducted from Nigeria and disease research focussed on East Coast Fever and trypanosomiasis in East Africa. Governance was to be by a single board and management through one Director-General.[23] However, a separate study was underway that would recommend a decentralized approach that aimed to understand exsisting production systems as a means of defining research programs. That approach was not attractive to donors when they convened through the wider base of the OECD Development Assistance Committee. The World Bank declined to contribute although later it was to provide unrestricted grants through CGIAR for up to a quarter of the total budget for some years.[24] In the end, two

livestock Centres were to be defined, one working on diseases and the other on production.[25]

The CGIAR having been formed concurrently with the preparatory stages of the livestock Centres became the nominal forum for further planning, and through its TAC was the body that decided on livestock research being spread across two rather than one Centre. TAC therefore supported the Rockefeller Foundation survey of African animal industries that in 1971 recommended a standalone disease laboratory and a separate animal production Centre. In the confusing administrative world of international agencies, it was again to be the Rockefeller Foundation that sponsored the enabling committee that in turn led to the 1973 agreement to create ILRAD in Kenya.[26] Earlier in the same year a memorandum of understanding had been signed between the Ethiopian Minister of Agriculture and CGIAR for the creation of ILCA. Both Centres were officially established in 1974. The initial logic of an integrated livestock centre, which was reiterated by the establishment committee for ILCA in 1974, was to remain thwarted until 1994.

The Birth of ILRAD

ILRAD was created to concentrate on developing a vaccine for theileriosis (East Coast Fever - ECF) and on trypanosomiasis. With decades of prior research and recent advances it was naively expected to produce results quickly. Suggestions to widen the research mandate were rejected and ILRAD remained anomalous within the crop- and region-specific Centres of the CGIAR.[27] Starting with provision for 40-50 international scientists ILRAD received an average annual budget of $11.5 million (2015 $) through the 1970s. Social science inputs were limited to epidemiology, which began in the late 1980s and was to become a major contributor to ILRAD's impact. Peer reviews in 1981 and early 1986 rated ILRAD's science highly and supported the constant hope of outcomes with production impacts. However, a further review in 1993 suggested a broader application of

molecular biology and immunological technologies and introduced a sunset date for work on a theileriosis vaccine.[28]

Officially established in 1974 on a site provided by the Government of Kenya,[29] ILRAD's Memorandum of Agreement between the Government of Kenya and the Rockefeller Foundation on behalf of the unincorporated CGIAR had been signed on 13 September 1973. The autonomous and non-profit international institution's was defined as serving "as a world centre for research on ways and means of conquering, as quickly as possible, major animal diseases which seriously limit livestock industries in Africa and in many other parts of the world. The Laboratory will concentrate initially on intensive research concerning the immunological and related aspects of controlling trypanosomiasis and theileriosis (mainly East Coast Fever). It may, however, eventually extend its research to other serious animal disease problems for which its facilities and expertise are appropriate, provided such extension is approved by its Board of Trustees and the Government of Kenya does not object from a disease safety standpoint. In carrying forward its programme, the Laboratory will develop close linkages with governmental and regional organisations undertaking research on the same or related disease problems."[30]

The Memorandum defined the site of the laboratory as some 100 acres at Kabete made available by the Government of Kenya with provision for "such additional land as the Laboratory may need for its field tests". The Centre's activities were defined to include: basic and applied research, research publication, linkages with African institutions, universities and research institutes, conferences, research training and dissemination of information. A proposal to include research conducted by the Institut d'Elevage et de Médecine Vétérinaire Tropicale in Upper Volta was considered by TAC to be outside the defined focus of ILRAD, and might be seen as the beginning of the East African based Centres enjoying less than expected funding support from France.[31] ILRAD's first Director-Designate, Dr. E.H. Sadun died before being

able to assume the post; the first active Director-General was Henson who was followed in 1979 by Allison.

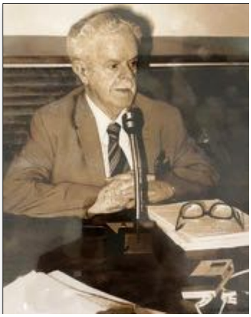
Formation documents specifically mention ILCA with which ILRAD was to “closely cooperate” in the knowledge that CGIAR might one day refine the relationship. The language employed after the deliberation about the creating one or two livestock centres implies something more than appeasement of opposing opinions at the time and might well be read as a CGIAR governance statement of a longer-term intention; it is one indication of assumptions of governance being shared between legally constituted Centre Boards and the ‘ad hoc consortium’ operating as CGIAR.

The Birth of ILCA

ILCA was to have a more difficult gestation. A task force was established to reverse the outcomes of the first serious attempt to design the centre, which had been thwarted by post-colonial European politics. A second mission, supported by the Rockefeller Foundation, reassessed the Task Force’s deliberations. The political and sometimes humorous machinations are described in some detail in a biography of that mission’s leader, Derek Tribe.[32] Negotiating sensitive territory between the crop- or region-centric models in some minds, an approach preferred by France and francophone Africa, and the conception of ILRAD, the mission consulted with 40 research institutes across 26 African countries. Despite such political thoroughness, the final report still required skilful midwifing by the influential TAC Chair, the World Bank’s Crawford. It may have helped that both Tribe and Crawford came from Australia.

The Tribe report confirmed an earlier-mooted livestock systems approach and proposed the mounting of applied multidisciplinary teams across livestock production, ecology, economics and other social sciences.[33] Most research was to be conducted with existing national and regional institutes to which it would act as a catalytic

influence. Its Ethiopian location was to be interpreted by some as appeasing anglophone-francophone issues but was more likely based on Ethiopia supporting the largest cattle population across diverse ecologies.[34] In 1974, Pagot was selected at ILCA's first Director-General, possibly to curry French support and expertise after the fractious debates over the previous years.[35]



Sir John Crawford, First TAC Chair,
Advocate to create ILCA and ILRAD

Diverse ecologies suited the ILCA systems research approach, which supported the assumption that knowledge of local conditions would facilitate adaption and adoption of known technologies to domestic ruminants, and to a minor extent camels. The wide range of research conducted by ILCA contrasted with the defined focus of ILRAD in Kenya. ILCA staff were spread across arid, humid and highland regions with multidisciplinary teams located in Ethiopia, Kenya, Mali and Nigeria. Costs soon became an issue, especially among those who recalled that the Centre was at one stage conceived to be a coordinating organisation with no major physical assets. ILCA's average annual budget was about US$17 million between 1975 and 1987 and rose to US$22 million between 1988 and 1994; its costs were to be 143 percent of those of ILRAD over the Centres' lifetimes. By 1982 a peer review questioned whether ILCA's systems approach had compromised research quality. A further review in 1987 was similarly critical, which led to a more focused strategy around dairy and meat from cattle and small ruminants, animal traction with an emphasis on

nutrition, trypanotolerance, policy and support resources including a major forage gene-bank. This ILCA focus was maintained until merger with ILRAD to create ILRI in 1994. Such a major change in strategy is a function of governance, and is further indication of TAC acting in a governance mode for the Centre.

This contextual chapter has introduced the governance arrangements of the Centres and its complicated oversight and guidance by TAC more than the Centres' Boards, even though the Centres were founded as 'autonomous … with an internationally sourced independent governing board' to avoid uninformed impingement on science. This last stipulation perhaps explains the overlap with the Board's strategic planning responsibilities since TAC itself comprised high level scientific persons. The decision to create the livestock centres was TAC's as was the final determination to not combine all functions in a single centre; such a formative role in other circumstances might have been expected to result in governance being fully handed over to Boards once the Centres were legally constituted. However, the intermingling of governance responsibilities that arose from the outset was to continue and to again become evident in the 1990s when merger of the centres to form ILRI was orchestrated through TAC.

Established at the time when parts of the Western world were impressed by treatises on impending famine[36,37] and the 'population bomb',[38,39] both the livestock Centres and CGIAR were a response to a grave moral imperative that has become only greater with further population growth and scientific knowledge. Together with Appendix 1 this chapter's overall context of international livestock research Centres associated with the CGIAR introduces the following chapters, which examine aspects and actions of the Centres' governance in approximately five year tranches across 46 years.

Chapter 2

The Formative Years: 1974-1980

The international environment of 1974 was markedly different from that of 2021. Developing nations were still in various stages of independence, and wealthy nations' vision of equitable global development was more evident than today. Within that ethos, great goodwill existed that allowed collegiate approaches without the range of legal formalities common today. This is perhaps a principal reason for the curious shared governance arrangements between the livestock Centres and CGIAR, as was also the case for other Centres within the group.

The non-registered group of the CGIAR is variously referred to as a membership 'effort' co-sponsored by FAO[40] sometimes mentioned in consort with the World Bank,[41] when in fact the Bank (IBRD) provided key staff and signed the ILCA establishment agreement with the Empire of Ethiopia on behalf of the CGIAR.[42] This amorphous CGIAR assumed the leading role in the creation and governance of Centres voluntarily aligning with it. Having been convened during the design phase of the livestock Centres, CGIAR soon established procedures that aimed to foster high quality science and continuity of funding. This function was undertaken largely through TAC, which had been established at the outset as a small and respected committee to guide research strategy across the Centres by influencing the allocation of donor funds. As the CGIAR now claimed to have 35 members comprised of 19 governments, 11 international funding organisations and five foundations with three co-sponsors – the FAO, UNDP and the World Bank – TAC was in a commanding position.

TAC soon implemented a process of five-yearly reviews that focussed on program and management performance. Initially conceived as separate reviews of research programs and their

management on the one hand and reviews of Centre management and governance on the other, the reviews later coalesced into large comprehensive investigations. They were usually conducted as peer evaluations based on mutual respect and an expectation that benefits accrue from objective and informed criticism of research programs, governance and management. One poignant example of this is illustrated by a final section of the 1993 review of ILRAD in which, after clear criticism and advice, a 'vision for the future' is offered in an idealistic and light-hearted paean.[43]

The reviews were seen by some donors as an evaluation mechanism, but in fact their use was more as a governance tool by which TAC communicated with donors and reinforced change in Centres through budgets, planning and programs that Boards and Management were to implement. Such influence in overall Centre strategy, research direction and allocation of finances consolidated TAC's key role in Centre governance. As comprehensive documents subjected to the bureaucratic processes of consultation with CGIAR members and the Board and Management of the Centre concerned, review recommendations and the commentaries they attracted provide a rich source for analysing the evolution of Centre governance. Those related to livestock research conducted through ILCA, ILRAD and ILRI inform the following chapters.

Livestock Research Centres: 1974-1980

As outlined in Chapter 1, ILCA was conceived though a 1970 Rockefeller Foundation meeting in Bellagio and gestated by a 1971 Task Force report that proposed a budget for a Centre. Confusingly, TAC documents of the time appear to imply this was not known to the parallel Rockefeller Foundation mission proposing the Centre that became ILRAD.[44] In any case, by late 1971 TAC minuted that separate institutes might be created and that ILRAD with its focus on pressing disease constraints should proceed first. Production constraints were to be defined more specifically before ILCA could be established. Uncertainty within

CGIAR at this early stage was further implied in late 1972 when ILRAD was again discussed as if it would be a component within an integrated African livestock research organisation.

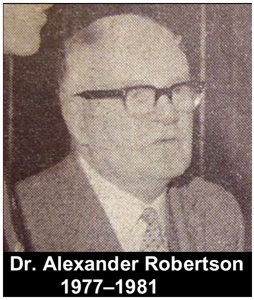
As mentioned earlier, a small team led by Tribe advanced the ILCA proposal and by 1973 TAC supported its recommendations. The report argued that “most essential is a more thorough study of animal production systems in tropical Africa with a view to full utilization of already available knowledge and to establishing an order of priority for future research. Such a study should embrace biology, economics and social anthropology in all aspects relating to animal production. This production systems approach will make possible research on mixed farming – combined crop and animal production, which are all too often considered independently of one another."[45]

Having both been established in 1974, ILRAD and ILCA were subjected to TAC-commissioned reviews by 1979-80. The review reports are dated around 1981 after the large number of concerned parties had commented – many of those formal responses formed part of the final public reports. Given that the Centres had been created at the time of CGIAR’s own formation, sharing of governance functions with TAC was accepted as the norm by the foundation Boards of ILRAD and ILCA. This is evidenced in their collegiate responses to claims and recommendations made by the independent review teams. As the two Centres were discrete entities located in different countries with largely distinct mandates with minimal overlap, they are treated separately in this and the following chapters for the duration of their independent existences, which were to end in 1994.

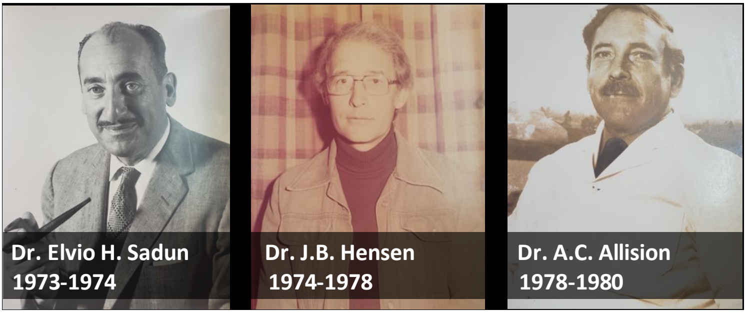
ILRAD: 1974-1980

Through this first five year period, ILRAD had two Board Chairs, Pino (1973–76 – no image found) and Robertson (1977-81), and two in-function Directors-General, Hensen (1974-78) and Allison

(1978-80); the inaugural Director-General designate, Sadun died before taking up the post.



Dr. Alexander Robertson
1977–1981



Dr. Elvio H. Sadun 1973-1974 | Dr. J.B. Hensen 1974-1978 | Dr. A.C. Allision 1978-1980

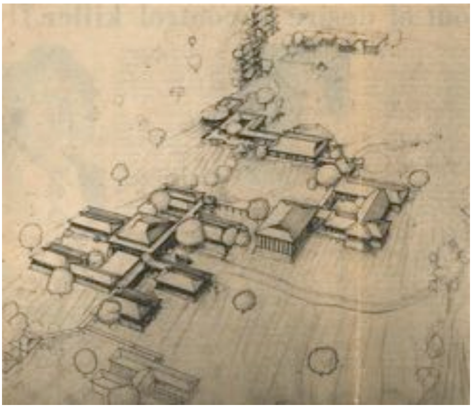
From the outset, ILRAD governance was said to be vested in a Board, referred to as a Board of Trustees, comprised of up to 12 persons of which two were appointed by the Government of Kenya, three by CGIAR and the balance selected to span the expertise deemed necessary, three of which were intended to be from African nations. The Board operated through Executive, Program, Finance, Training and Nominating committees made up of subsets of Board members. This meant that the Program Committee did not have external scientific expertise, which led to specialist advice being sought from a Scientific Advisory Committee that consisted of four persons selected by the Director-General with expertise in parasitology, immunology and animal diseases. While this Board composition might seem anomalous with five decades of hindsight, it was in accord with the times when representation roles and Director-General

responsibilities were not mutually exclusive and when Board members were quite different from company directors. One would surmise that a Centre Board role in that era was understood as being a voluntary member of a penultimate committee subsidized by a home employing institution. The model included attitudes inherited from the era of the Marshall Plan and elements of national research bodies in major nations and universities, albeit with a North American flavour.

Notwithstanding apparent comfort of the concerned parties with these governance arrangements, the 1980 review found that during its first five years ILRAD had suffered "its share of problems, due primarily to lack of precision regarding the respective areas of responsibilities of the governance and top level of management aggravated by a lack of competent and responsible administrative personnel. Much of ILRAD's trouble lies in lack of mutual confidence, communication and trust between the Board and the Director."[46] Experience from Western institutions and development assistance was already proving inadequate for the nuanced requirements of small autonomous multinational institutions conducting elite research in under-resourced poor nations. One example of the confused levels of autonomy in decision-making was highlighted between capital and operational budgets; budgetary constraints that had resulted from slow decision-making to build housing at ILRAD at the same time that a housing shortage in Nairobi that had driven up rental and security prices was causing higher operational costs.

Focussed on control of trypanosomiasis and East Coast Fever by immunological or similar means, ILRAD established slowly due to delays in completing scientific facilities. This appears to have been exacerbated by other disruptions that led to changes in the Director-General's position. It was concluded that preparation and design of the Centre had underestimated the difficulties of working in such a development environment. It was therefore a tribute to the Centre itself that by the time of the first five-yearly review in 1980 under the chairmanship of Camu, ILRAD was said

to be "an outstanding complex of considerable architectural beauty and with facilities, possibly unique in Africa". The review was scientific and technical in orientation and the panel engaged deeply in the research activities of the Centre, which was reasonably straightforward because of the Centre's focus on two diseases. Such focus made ILRAD unique among CGIAR Centres, and was justified by the review in the light of the intractability of the diseases. The review was "of the opinion that the mandate of ILRAD should remain as it is, basically focussed on trypanosomiasis and East Coast Fever until significant success has been achieved in at least one of the two mandated diseases".[47]



Architect's Impression of the early ILRAD campus[48]

Overall, the review agreed it was appropriate that training and technology transfer lag in favour of developing physical facilities and major research initiatives that engaged 50 scientists across pathology, immunology, parasitology, cell biology, biochemistry and molecular biology. The expectation that an immunological mechanism to address East Coast Fever could be developed within five years was agreed by the independent reviewers who also acknowledged that trypanosomiasis presented a more complex challenge. Research advice included: integrating a trypanotolerance program supported by the Rockefeller Foundation in The Gambia, and adding FAO expertise in

trypanosomiasis and tick-borne diseases to the ILRAD Board. Such advice clearly entered the realm of governance in terms of Centre strategy and Board composition, and indicates that the reviews were one of TAC's instruments for involvement in Centre governance.

Among its recommendations the review advised a "clear definition between the Board of Trustees, the Programme Committee, the Scientific Advisory Committee and the Director" and further emphasised "the Board's primary identification with general policy and the Director's identification with management". This would all seem to have been usual in an independent organisation yet the review felt it necessary to add "that the Director be given by the Board of Trustees authority and full support for the management and the conducting of the approved research programmes [and] that the next Director be an internationally recognized scientist with proven research leadership and ability". Such words further highlighted the mixed involvement of TAC and its reviews, the Board and Management in the governance of ILRAD.[49]

The review also made recommendations about research management, including; appointing the full complement of scientific staff, considering contracts longer than two-years, funding visiting scientists, and delegating research management to project level. In addition, the final review document offers lessons in science by including several illustrative slides to support immuno-epidemiological work on antigenic strains of tsetse-transmitted trypanosomes, and recombinant-DNA technology. While casting doubt on the value of ILRAD's Program and Scientific Advisory committees, such inclusion assists the latter day reader to see the review as following the approach of an international peer review of a research university department.

In effect, TAC established the research mandate that the ILRAD Board oversaw as a committee that annually delegated the Director-General to deliver the program. Debate as whether the

Director-General should be an administrator more than a scientist was clarified by the review's unanimous recommendation that the Director "must be knowledgeable in today's science derived from active participation, and with an established reputation for leadership. With this background, he can attract the best recent research scientists"[50] to the six operating divisions of; parasitology, biochemistry, molecular biology, immunobiology, cell biology and pathology. In 1980 there were positions for 14 core scientists, 9 visiting scientists, 13 post-doctoral scientists and 11 research associates. across the divisions as per Table 1.

Table 1. Research Staff by Discipline Filled
(at the time of review, excluding Research Associates)

Discipline	No. Staff
Parasitology	7
Cell Biology	6
Immunology	9
Molecular Biology	2
Biochemistry	7
Pathology	7

While the review's recommendations refer in part to research management they also impinge on research strategy which an observer today would see as a Board role. Similarly, proposals for strategic investments involve a Board, which in the review seems sidelined in a discussion about reliable supplies of uniform, single breed, healthy and well-nourished animals susceptible to the disease. Requiring greater numbers than those animals used research in 1979 as presented in Table 2, and with only 92 rough acres available, additional land was needed. While the Board agreed with the need, it relied on TAC's access to donor funds and thus it was TAC that approved $l.2 million to purchase new lands.

Table 2. Animals Used in Research, 1979[51]

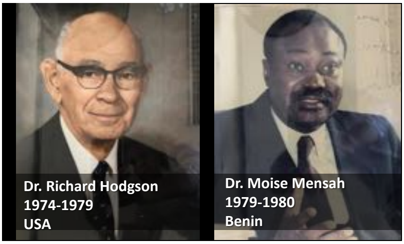
Cattle	569
Sheep & Goats	404
Rats	12,000
Mice	20,000
Rabbits	400

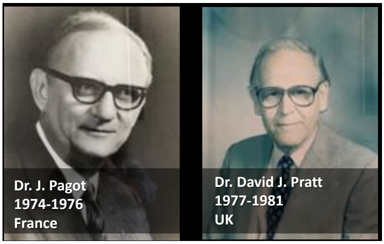
Kapiti Plains Estates Limited in Konza was deemed suitable for the production of stock for research. Described as 13,000 hectares at an average altitude of 1,800 m with an average annual rainfall of about 500 mm served by sealed road and sufficiently fenced to maintain the health of stock, the review observed that indigenous wildlife "might have to be discouraged or other steps taken to limit the problem of contact" with the 'naïve' cattle. With potential to produce more animals than anticipated for research, the investment was thought to be risky "unless the very highest standards of estate management and animal production precepts are observed".[52] Purchase of such a capital asset was most unusual within the CGIAR Centres, and its ownership was to prove an anomaly for a multinational organisation.[53] The governance decision to purchase was sheeted to TAC as it was presented as a proposal of the ILRAD Board and Management for TAC to resolve through the review team. Governance, power and responsibility were thus mixed in an arrangement that worked while funds flowed and trust was mutual.

Sharing of roles across TAC, the Board and Management is further highlighted by the review's casual reference to "a document submitted to the Panel by the Director and entitled 'The Next Five Years at ILRAD', dated February 1980. The document … has not been examined in detail by the Board of Trustees pending the reaction of the Quinquennial Review Panel".[54] Somewhat diplomatically, any suggestion of the Board abrogating its responsibility was pre-empted by arguing that a proposed expansion into human parasitology was outside ILRAD's mandate and that in reserving comment, the Board was avoiding conflict with Management. If the review was seen as an instrument of governance serving the Board this might be explicable, but as TAC commissioned this and other reviews, it is clear that the Board saw TAC as ILRAD's ultimate governing body.

ILCA: 1974-1980

Through this first five year period, ILCA had two Board Chairs, Hodgson (1974–79) and Mensah (1979-80), and two Directors-General, Pagot (1974-76) and Pratt (1977-81).





Differing opinions about the business of ILCA predated its official formation in 1974 and possibly contributed to its delayed development of an initial research strategy until 1975. In 1976 the Government of Ethiopia formally granted a 99-year lease on land inside the city limits of Addis Ababa for ILCA headquarters where its buildings were finally inaugurated in 1980; the Debre Zeit highland station was made available in 1976 and in Debre Berhan in 1978. ILCA's geographical coverage influenced staff recruitment and agreements with governments took time – some were signed with Mali and Kenya in 1976 and Nigeria in 1977. TAC expressed concern with delays and rising costs, which led to a budget revision in 1977 and to TAC reviewing Centre management. The Director-General resigned around this time and ILCA was overseen by a mixed governance and management team comprised of Board members Tribe and Pratt and a staff member, Temple. Pratt was formally appointed Director a year later.[55]

The TAC Mission in 1977 recommended multidisciplinary programs across four ecological zones and continuation of the systems research approach "supplemented by more conventional research such as the improvement of forage and fodder plants".[56] By 1978 TAC further tightened its directives and required improved analysis of constraints to livestock production to define

research while inconsistently questioning the collection of monitoring data and the systems approach.

Signing of the ILCA Establishment Agreement, February 1973

Signing the original World Bank/Government of Ethiopia agreement establishing ILCA, February 1973. Sitting at the table are Harold Graves, Executive Secretary of the CGIAR (left) and Dejazmatch Kassa Wolde Mariam, Minister of Agriculture, Government of Ethiopia (right). Standing, from left to right are: Derek Tribe (leader of the second Task Force), Joe Hulse (Director of the Agriculture Division of the International Development Research Centre (IDRC), Canada), Eric Gregory (IDRC consultant), Barry Nestel (IDRC; member of the Tribe Task Force, the executive secretary for setting up ILCA; subsequently chairman of ILCA Board of Trustees), Ralph Cummings, Sterling Wortman (Director of Agriculture at Rockefeller Foundation), Walther Schaeffer-Kernhardt (IBRD), David Pratt (Overseas Development Administration, UK; member of the Tribe Task Force; subsequently member of ILCA Board of Trustees, then Director General of ILCA), Jean Pagot (Institut d'élevage et de médecine vétérinaires des pays tropicaux, France; first Director General of ILCA), Lowell Hardin (Ford Foundation), Ralph Hodgson (United States Department of Agriculture, USA; first chairman of ILCA Board of Trustees), Moise Mensah (Assistant Director General for Africa, Food and Agriculture Organization of the United Nations; second chairman of ILCA Board of Trustees).

Within a year, TAC stated that ILCA "should retrace its steps and examine the different alternatives to the implementation of monitoring inputs with adequate definition of objectives and techniques" since there was "no convincing evidence that sufficiently serious attempts have been made to devise strategies for the study of the major constraints and means of their alleviations." This seems to have meant that research program design needed external assistance. In 1980 TAC "reiterated its concern that monitoring activities were overemphasized while training and cooperation with African countries and institutions would require closer attention and increased efforts to ensure a practical impact of ILCA's programmes on the improvement of

animal production systems." These and further questions were referred to the first quinquennial review of ILCA that took place in 1981.[57]

By the time of the 1981 ILCA review, nine such reviews had been conducted of other CGIAR Centres, and there had been two specific TAC investigations of ILCA, in 1977 and 1979. The principal difference between the two previous investigations and the 1981 quinquennial review was rising awareness of both the role of livestock in African food security and the demands of covering the extensive geographical, ecoregional and disciplinary span of ILCA's mandate.

ILCA's mandate as described in the 1974 Memorandum of Agreement specified its purpose to "assist national efforts which aim to effect a change in the production and marketing systems in tropical Africa south of the Sahara so as to increase the total yield and output of livestock productions and improve the quality of life of the people in this region". As an international research Centre it was to develop and demonstrate improved livestock production systems, facilitate training, collate and collect multidisciplinary documentation in French and English and work closely with national and regional organisations. The operation of ILCA was defined further through its grouped activities, which included identifying means of increasing the efficiency of production by: assembling relevant information; engaging multidisciplinary staff; working with national and regional research programs; developing research capacity; organising conferences and training courses; providing support to national, regional and international authorities concerned with animal production, and any other activities relevant to the Centre's purpose.[58] It was an impossibly diverse portfolio for the fledgling Centre.

Perhaps the early days of ILCA are best captured by a comment of the TAC Chair, John Crawford – later Sir John, who by dint of personality and intellect influenced many international directions.[59] As Chair of the ILCA review in 1981, he wrote that

the experience "was a harrowing one", not only because of the geographical breadth of ILCA in Africa, but also its programs and approaches. Undaunted, he went on to state that the need for ILCA was confirmed by the experience of the review team, and that it needed to be realised that ILCA was quite different from the crop research institutes of the CGIAR System.[60] Both comments had implications for the governance that ILCA needed.

With research operations from the Sahara to South Africa across semi-arid areas to humid zones that encompassed huge livestock and sociological variations, ILCA's expertise was spread thinly with ill-defined roles for research that crept towards development and advisory functions. This issue was further complicated by some advice proffered on the basis of the supposed relevance of foreign technologies without them having been tested in local conditions. The review attributed these and other concerns to; the breadth of the mandate, the mode of leadership, "haphazard" appointments and favouritism, and the youth of scientific teams – to which they might have added colonial history as also implied in an unhelpful complaint about an "imbalance between Anglophone and Francophone areas".

Taking into account these and multiple other matters raised in the report, the review was able to conclude that "The Panel's verdict on ILCA is a positive one. As stated in the Report, it is critical but constructively so. The Panel firmly believes that with much of the baseline system surveys now completed or near completion, with growing awareness of the importance of the research on constraints, with the rising and potentially great significance of its network approach and with full attention to the structural changes suggested by the Panel and to the need to raise the level of scientific competence in vital areas, ILCA will meet the challenge before it. It is a tremendous and difficult challenge. Despite all the difficulties in its short history, ILCA has achieved a groundwork which now does enable it to raise the level of output in quality and volume, and, not least, to play an increasing part in

strengthening national research institutions who are primary principals in the total endeavour."[61]

Board Chairs through these years had been, from the inaugural Chair Hodgson, who was succeed in 1978 by Mensah and then followed in 1980 by McDowell. The most important Board Committee was the Program Committee chaired by the ubiquitous Tribe who was succeeded in 1980 by Provost. The Board Program Committee was deeply engaged in what would today would be seen as a function of management; for example, the committee formed subcommittees to conduct detailed examination of research programs and projects and presented its analysis to an annual Board meeting as input for Board planning of future research. While the Director-General was a member of the Board, the arrangement relied on an open and respectful relationship for efficient Centre operation – but the Board's mixing in both governance and management necessarily diluted its oversight functions.

ILCA was a beloved problem-child to TAC. TAC endorsed the review's statement that "no other research institute within the CGIAR system [has] more natural, inherent and often financially costly difficulties than ILCA in devising appropriate management and operational principles and practices". Perhaps it meant to imply the obvious need for clear governance to oversee management across seven locations in five countries that were each treated as host governments while ILCA also worked through agreements with ILRAD, IITA and ICRISAT and attempted to report in both French and English. An unsettled political situation in Ethiopia, low staff morale and questions about ILCA's scientific work added to the governance demands.

The Board appears to have established some policies within the constraints of the TAC program goals in a manner that constrained the Director-General to an advisory role. This was perhaps not unusual for the times when the Board's Programme Committee engaged with Project Leaders and the Director-

General was seen as primus inter pares among the scientists. Nevertheless, "some scientists were unclear whether their responsibility was to management or directly to the Programme Committee".[62] If such reviews were seen as instruments of governance, which is a reasonable assumption given the influence of TAC, the preceding comment seems a variance with advice that a new Director-General should support high quality research through delegation, communication and leadership. That would have been impossible unless the Board's Program Committee was reined in.

So far as strategy for an organisation's essential business is a primary function of governance, commentary on the review provided valuable context by acknowledging that ILCA's multidisciplinary approach applied across cropping research informed by analytical economics.[63] It remained moot as to whether that understanding extended to the review's highly detailed recommendations about: metabolism stalls; holding yards; weighbridges and crushes; computer statistical capacity; cartographic skills; research recruitment; animal traction; indigenous ruminant research; sociological studies; research planning; forage legumes; postnatal mortalities; monitoring; Francophone Africa, rangelands traversed by the Fulani, as well as improving working relations with the Kenyan authorities, ILRAD, ICRISAT, IITA and other international Centres.[64]

ILRAD and ILCA at five years of age struggled through vestiges of colonial mindsets and governance structures that had no major precedents – international development had no other high-level multinational research network. Relying on mature senior leaders in TAC and the Centres, reviews served as informed feedback in an era before ready electronic communication. The following five years would test such mixed governance arrangements as the Centres consolidated their operations, as discussed in the following chapter.

Governance of ILCA and ILRAD began on the goodwill basis common to the era more than on legal formalities, and consequently assumed that it was normal for governance responsibilities to be shared and reviewed periodically through peer evaluations. Boards accepted their assignment to the role of a penultimate committee implementing TAC governance decisions and interpretations of Centre mandates, strategic planning, capital investment and Board composition. Beyond governance, Board involvement in Management's realm, which was most clearly evidenced in ILCA's early years, compromised the oversight functions of Board governance. Yet the nexus of TAC, Board and Management functioned sufficiently well for both centres to slowly establish themselves through their first five years aided by the shared cultural and scientific values of the concerned personalities.

Chapter 3

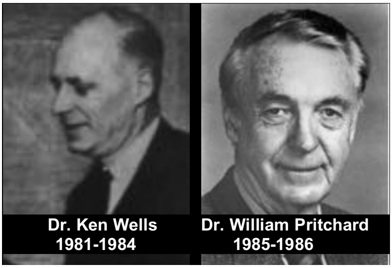
From Establishment to Consolidation: 1981-1986

After their different teething issues, ILCA and ILRAD separately consolidated their experiences to grow towards fully operational research Centres. The hierarchical relationship with CGIAR was accepted as the norm, and in turn CGIAR practices evolved to became more formalized. An example of this rising bureaucratic approach is evident in procedures after two ILRAD reviews conducted in 1985 were submitted by review Chairs to TAC. With the program review for example, the Chair submitted the completed report in January of 1986 after which the ILRAD Board through its Chair formally responded to TAC in March, which triggered TAC to summarize its views to the CGIAR Chair soon afterwards. The report then awaited the CGIAR Secretariat submitting the report to the CGIAR meeting in November, which the review Chair attended to present the report. Thus publication of reviews can span two calendar years. In the interim, the Board theoretically had the opportunity to act on major findings, but in reality felt constrained by its subordinated relationship with TAC.

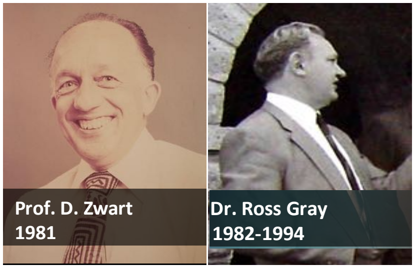
With this context for the next five-year tranche, this chapter accords with the time period covered by the five-yearly reviews undertaken by independent international panels commissioned by TAC around 1985-6.

ILRAD: 1981-1986

During this period, ILRAD had two Board Chairs, Wells (1981-84) and Pritchard (1985-86), and two Directors-General, Zwart (1981) and Gray (1982-94).



Dr. Ken Wells 1981-1984 Dr. William Pritchard 1985-1986



Prof. D. Zwart 1981 Dr. Ross Gray 1982-1994

Under the chairmanship of Mortelmans, the program review rated the staff, research and management as being of high quality and operational cost-effectiveness, and as being consistent with animal and research ethical standards of the day.[65] Informed by a ten-year plan developed jointly by Management and the Board,[66] the review proffered advice on new research opportunities with potential to improve disease control. The only deviation noted from ILRAD's narrow mandate was a Wildlife Diseases Project on trypanosomiasis and theileriosis funded outside CGIAR by the Netherlands, which had begun in 1967 through the Kenyan Veterinary Research Institute. While activities beyond the mandate would be expected to be a responsibility of governance, the decision appears to have been made by Management with the Board acting in management more than in governance mode. In such a context the TAC-commissioned review can be understood as an instrument for governance corrections.

Calling for more basic research into the bovine immune system to advance practical control mechanisms for theileriosis and trypanosomiasis, the review argued for long-term commitments and networking with other livestock and vaccine research outside CGIAR, although including ILCA. Research collaboration included institutes and universities in Belgium, Burkino Faso, The Gambia, Germany, Italy, Netherlands, Switzerland, UK as well as African-based organisations such as; International Centre of Insect Physiology and Ecology, Kenya Trypanosomiasis Research Institute, Kenya Veterinary Research Laboratory, Veterinary Research Department of the Kenya Agricultural Research

Institute, Organization of African Unity's for Animal Resources, Kenya Medical Research Institute, and Faculties of Veterinary Science, Medicine and Science at the University of Nairobi.[67] Presumably each relationship was endorsed by the Board and/or TAC.

The second review of ILRAD covered governance and management. Undertaken by Raymond and Ramanathan, it effectively raised the standard of analysis about governance in ILRAD and possibly other CGIAR Centres.[68] By examining research management more than its scientific detail it promoted sound Centre governance based on clearly defined roles of the Board and Management. At the time the Board Chair was Pritchard and the Director-General was Gray.

Commenting that recommendations for improved research and administrative management from the 1980 review had not been implemented, the 1985 review saw "a most disturbing situation at the Laboratory, with the Director-General strongly at odds with the Board of Directors, and with an incompetent administration".[69] Politely suggesting that the Board should "contribute more effectively to policy formation", the import of this serious governance issue was downplayed when CGIAR commentary on the review praised governance and management. However, a later CGIAR letter suggested appointment of Board members with experience more than "specialized competence" and specifically mentioned financial expertise. The Board seems to have interpreted this, together with criticism of financial controls and external audit, as justification for the Board to take over appointments of both finance and research head roles from the Director-General. Having observed such confused understanding of the role of Board governance, the review widened its recommendation to advise the CGIAR Secretariat to "study the role of the boards of trustees in appointment of senior staff" across all Centres. The Board's role in determining strategy, fostering career development and ensuring the adequacy of physical facilities was also questioned.

At the behest of TAC a comparison with ISNAR (International Service for National Agricultural Research) was included in the review, which concluded that the needs of the governance and management of the two Centres differed radically. This is one of many indications of the default assumption that a common governance approach was applicable to all CGIAR Centres – perhaps a reasonable assumption in some minds, but potentially problematic in the 1980's mode of implementation if any Centre Board sought to challenge TAC. No such challenge occurred from either ILRAD or ILCA presumably because their creation at the same time as CGIAR led them to accept the arrangements as the norm, including the perverse incentive for the Board to engage in Management's realm.

After ten years, ILRAD was established with: 40 scientists, 40 technicians and more than 300 administrative and support staff; visitor and staff housing; six research laboratories; electron microscopy; radioisotope and irradiation facilities. Kapiti ranch was able to provide most of the cattle for research. ILRAD was one of 13 CGIAR Centres with its $10 million budget contributed by; the World Bank, UNDP, Rockefeller Foundation and the governments of Australia, Belgium, Canada, Denmark, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, Saudi Arabia, Sweden, Switzerland, the UK and the USA. ILRAD was therefore required to wean itself from budget requests based on being in a development phase to being an established international research Centre. With this realization, the expectations of the Board were to be further adumbrated.

Notwithstanding the 1973 Memorandum of Agreement statement "that the Laboratory would be an autonomous, non-profit organization, international in character, and governed by a Board of Trustees", it took until 1983 for the Board to define procedural rules. This accompanied rationalisation of the Centre's registration, which had originally been as a company limited by guarantee under Kenyan law. The Board then became a Board of

Directors rather than a Board of Trustees, which while making little functional difference, introduced confusion with the title director also being applied to heads of divisions. The review "did not understand why ILRAD was initially established as a company under Kenyan law, rather than as a research institution with true international status". The significant questions about liabilities and governance responsibilities that arise from these arrangements are today to be considered within the context of Kenyan law of the time, and the goodwill surrounding ILRAD and other international centres in Kenya. The arrangement also partly explains the purchase of Kapiti as a private Kenyan company.

By 1985 ILRAD's 12 directors – two nominated by the Government of Kenya, three by the CGIAR, three of the six others from African nationals and the Director-General – followed procedures that elected the Chair and Vice Chair for up to three years with annual confirmation, with the Board meeting annually around March. An Executive Committee met twice or more a year and effectively rendered full Board meetings into information sessions for other Board members, as well as senior staff who were invited to attend. Registration as a Kenyan company had required a special session to formally approve resolutions. Curiously, the corporate registration and its requirements does not seem to have clarified Board behaviour, or to have raised questions about the involvement of a non-constituted body such as TAC in governance.

The review emphasized that Board committees for Programs, Finance and Training needed to focus on policy and oversight rather than engaging in implementation. It found that Board effectiveness had improved since the previous review yet still required improved understanding, invoking a 1981 instance of two Board members having acted as Director-General. While acknowledging the "difficulty of identifying people who have both special capability and sufficient time" to serve on the Board, the review incidentally highlighted that Board Chairs and the

Director-General were all from Anglo-Saxon nations, as indicated in Table 3.

Table 3. ILRAD Board Members by Country and Duration, 1981-87
(Chair shaded)

Country	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**
Kenya	•						
Kenya	•	•	•	•	•	•	•
Kenya		•	•	•	•	•	•
Nigeria	•	•					
Cameroon	•	•	•	•	•		
Zaire		•	•	•	•	•	•
Zimbabwe			•	•	•	•	•
Ghana			•	•	•	•	•
USA		•	•	•	•	•	•
USA				•	•	•	
UK	•	•					
Netherlands	•	•					
Canada	•	•	•	•	•	•	•
Australia	•	•	•	•	•	•	•
Germany	•	•	•	•	•	•	•
Switzerland						•	
Director-General (UK)	•	•	•	•	•	•	•

The budget process of ILRAD, in common with other CGIAR Centres, was for the Board to propose a budget to TAC on the assurance that the Board's Program and Finance committees had agreed on it after review of the previous year's performance. Once finalized, donors met with Centres at International Centers Week in Washington each year to pledge funding. This hybrid of government department and UN approaches to budgets, financing and oversight reflected the recent past, but funding and accountability environments were already changing elsewhere, which was to impinge on the CGIAR model that had worked so well initially. By the 1980s donor pledges were sometimes unfulfilled, which led to shortfalls only becoming clear towards year end. Such change implied a need for more professional

governance to oversee management challenges. This was the era that the World Bank became the 'donor of last resort' to provide a budgetary soft landing; in the mid 1980s, ILRAD suffered less from such cuts than other Centres.

Funding for ILRAD from 1981 to 1986 is presented in Table 4, which indicates a steady rise in 'core' budgets – funds promised by donors through the CGIAR mechanism. Special projects – principally the wildlife diseases project funded by the Netherlands – were the only other measurable source of ILRAD income and represented less than three percent of the total expenditures. This proportion of special projects was much lower than that at other Centres in the mid 1980s, even after a later Rockefeller Foundation vaccine project was factored in. Overhead costs of special projects were subsidized from the core budget. Fiduciary responsibility for finances also extended to the earlier major capital purchase of Kapiti.

Table 4. ILRAD Expenditure (1981-84) and Budget (1985-86) ('000 US$)

Type	1981	1982	1983	1984	1985	1986
Core	7445	7452	8357	8491	9360	9945
Special	123	141	203	236	163	165

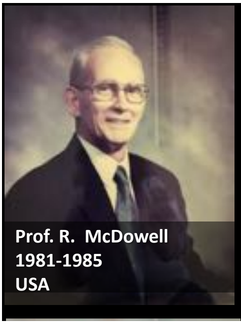
The 13,000-hectare Kapiti Plains Estate had been purchased in December 1981 for a total cost of $1,521,400 by acquiring nearly all shares in that company. It was intended to operate as a subsidiary of ILRAD and was similarly registered as a company under Kenyan law. A single share was allocated to each of the three members of the Board of Kapiti presumably to accommodate a nuance of Kenyan law. Accounting for the subsidiary company was included as operational costs net of income and the asset was included in the balance sheet at its purchase price. ILRAD capital development expenses at Kapiti were treated as loans until year-end when they were converted to shares and so nominally increased ILRAD ownership, which by 1984 was valued at $1,786,000. Facilities at Kapiti required upgrading for ILRAD's purposes, which led to construction of nine

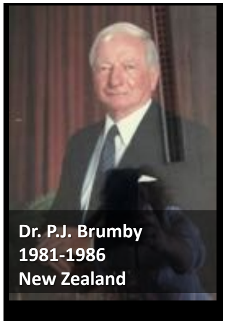
houses, cattle yards and grids, water tanks and pipes as well as installation of generators. Tick and wildlife control required 130 kilometres of new fencing, and management separate from ILRAD required additional personnel.

Purchased to provide a line of relatively disease-free Boran cattle required for immunological research, with surplus cattle to be sold at market, it was decided to maintain a 1,000 cow breeding herd. By 1984 Kapiti had proven its value in being able to continue supply of animals for research in a period of drought when no other cattle would have been available. That drought increased production costs substantially and may have been the reason that the accounts of Kapiti were not fully consolidated into those of ILRAD and were audited separately. In terms of financial viability, the price paid by ILRAD to Kapiti for calves used in research was arbitrary; as a specialized product not available from another source, calf price became the means of balancing accounts. This transfer arrangement led to questionable claims that Kapiti had a positive cash flow. Unsurprisingly, the 1985 review recommended that any profit be used to pay down loans made by ILRAD rather than continue the practice of converting loans to shares. It also required that authority lines and signatories be appropriately aligned, a matter that might have otherwise been raised by external auditors. As these were governance matters that would normally be handled by a Board, it must be assumed that all parties were comfortable with TAC reviews performing much of this function.

ILCA: 1981-1986

During this period, ILCA had two Board Chairs, McDowell (1981-85) and Nestel (1985-87), and one Director-General, Brumby (1981-86).





The second quinquennial review of ILCA led by Thomsen was delayed in publication by TAC, which had issues about Board and Management responsibilities.[70] The issue had arisen from TAC research priorities for ILCA being communicated to the Board, which in turn referred them to the Director-General with instructions to develop a strategy. TAC saw development of research strategy to be a responsibility of the Board. In addition to TAC commissioning the review, a TAC member formed part of the team, a clear indication that TAC considered itself the ultimate decision-making and policy body of the Centre. Despite continuing goodwill, that governance arrangement was proving inadequate for ILCA's overly comprehensive portfolio across wide geographies, species and disciplines within the farming systems approach. Personalities may also have played a part. One or other of these factors was to continue to affect the governance of ILCA after the review.

TAC had previously determined that ILCA should focus on small ruminants, integrated crop-livestock systems and sustainable production more than on pastoral systems, and should involve 'client' countries. TAC therefore considered that ILCA had neither responded to this change in strategy nor delivered a strategic plan. In a clear indication that these governance areas were TAC's preserve, it delayed approvals including that of the review until a strategy was produced. Yet TAC allowed itself to offer an 'interim commentary'[71] that discretionary Board members with policy and research oversight experience should be appointed and

demonstrably serve in personal capacities. After this first decade, was TAC now seeking to develop the governance capacity of the Board? The answer would be clear if the ILCA Board grew to become an independent Board of the autonomous Centre in the following years.

Table 5. Countries with which ILCA had Formal Relationships as of 1986.[72]

	Zonal	Cooperat'n	Signed MoU	Intended MoU
Ethiopia	•		•	
Nigeria	•		•	
Kenya	•		•	
Mali	•		•	
Niger	•		•	
The Gambia	•		•	
Benin		•	•	
Botswana		•	•	
Rwanda		•	•	
Senegal		•	•	
Zimbabwe		•	•	
Cameroon		•		•
Côte d'Ivoire		•		•
Congo		•		•
Burkina Faso		•		
Gabon		•		
Malawi		•		
Zaire		•		
Togo		•		
Tanzania		•		
Mozambique		•		
Sudan		•		

Meanwhile the Board Program Committee worked jointly with Management to determine program changes and resource allocations in a process that the review appeared to condone by viewing the Committee as peer science advisors. Apart from the compromise this sustained in the Board's oversight role, the research program continued to be hampered by problematic recruitment of staff; this is illustrated by an anecdote from the late 1970s. When ILCA's influential founding Board member, Tribe,

sought to recruit a young Australian livestock researcher working in Asia he received the response that freedom to conduct useful and interesting livestock research was greater in Asia than in ILCA, thereby reflecting a perception that had seeped into the international fraternity.[73] But that perception was becoming outdated by the mid 1980s.

TAC's unstated assumption that a uniform approach to governance and management could be applied across all CGIAR Centres was based on its experience with single crop Centres. The geographical spread of ILCA's research, as indicated in Table 5, involving multiple animal species within a farming system had in fact been consolidated into a Board-approved long-term plan subtitled 'Towards the Year 2000'. The plan was overtly contextualized by the mandated purposes of ILCA having taken into account the previous review's recommendation to consolidate resources around the Addis Ababa headquarters, as indicated in Table 6. It seems possible that TAC was becoming overstretched in trying to govern 13 Centres.

Table 6. ILCA Core Research Expenditure by Programs.[74]

	1981	1982	1983	1984	1985
Headquarters	24	30	38	43	47
Highlands (HQ-based)	11	12	12	15	14
Humid	16	13	10	8	8
Sub-humid	16	18	14	12	9
Sahel	17	12	13	9	8
Kenya range	13	12	8	7	5
Ethiopia range*	3	3	4	6	9
Botswana	-	-	1	1	-

ILCA became increasingly effective in conducting high-level strategic research oriented to well-identified researchable problems that required improved research and laboratory facilities, training of technicians and linkages to other research bodies. The review recommended that training costs be covered by specific training projects or by trainees' organisations on a sustainable basis, thereby initiating an expectation that was to

persist into the next century with the creation of BecA. In any case, ILCA's investment in training from 1981 to 1985 while rising, remained relatively low as indicated in Table 7. Researchers published less than expected as they supported individual and group training across 37 countries between 1977 and 1985, which catered for 70 individuals and 372 groups.

Table 7. ILRI Core Operating Expenditure Percentages by Activities.[75]

	1981	1982	1983	1984	1985
Research	63	65	65	63	66
Information	9	8	9	9	9
Training	6	4	7	8	9
Admin & Overheads	22	23	19	20	16

Publication output, multiple demands on researchers and other issues derived from ILCA's excessively broad mandate, which could only be changed by revision of the constitution, and that was the legal preserve of the governing body. However, the review sidestepped this governance issue and simply suggested international peer referees for publications that should target elite journals. It was little wonder that publications were overwhelmingly in English and oriented to national scientists – refer to Table 8. Matters were partly addressed when a new Director of Research observed that ILCA reflected a development more than a research orientation, although it would appear that it was a mixture of both as was common for farming systems research. That approach produced networks that proved useful into the future, including: African Livestock Policy Analysis Network; African Research Network on Agricultural By-Products; Alley Farming Network; Animal Traction Network; Forage Network in Ethiopia; Gliricidia Germplasm Evaluation Network; Pasture Network for Eastern and Southern Africa; Small Ruminants and Camel Network, and in conjunction with ILRAD, Trypanotolerance and Animal Productivity Network. Oversight of such diverse engagements also complicated management and governance.

Table 8. Numbers and Types of ILCA Publications & Target Audiences[76]

Type of Publication	Intended Readership	English		French	
		84	85	84	85
Bulletin	Scientists, economists, planners, research administrators	3	3	1	5
Annual Report	Donors, national research leaders	1	1	2	-
Research Report	Scientists	3	1	2	-
Conference Proceedings	Participants, scientists, others	1	2	-	-
Network Newsletter	National scientists	10	17	2	4
Accessions Bulletin	Libraries	5	5	-	-
Bibliographies	Scientists, libraries	-	2	-	-
Microfiche Indexes	Libraries for scientists	1	1	2	1
Newsletter	All of the above	4	4	4	4

Governance and management must have improved if one accepts the review's comment that "since 1981 the Center has witnessed several very positive changes. This applies to the general atmosphere, the level of scientific competence and the improvement of headquarters facilities. There has been a distinct move towards more component research, and the zonal programs have started to develop appropriate packages of technology for intervention."[77] Made in conjunction with the various criticisms this might be a recognition of the difficulties described above, or on the other hand might simply be the platitudinous commentary common to some CGIAR documents. In any case, the essential issues of governance were not fully addressed and some views may be biased towards past ideas from older reviewers unfamiliar with field activities of younger appointees in rapidly changing environments. Such a suggestion was arising generally in the 1970s and 1980s.

With the most wide-ranging portfolio of research of any CGIAR Centre, ILCA can appear ill-conceived to later observers. Yet despite its thin spread across diverse African nations and animal species, and engaging most disciplines of animal science including

the social sciences, it produced useful outputs. Perhaps impact would have been greater if governance had been better defined between TAC, the Board and Management particularly with respect to budgets. More probably, impact after a decade would have been greater if the initial design had been tighter, and if reviews had been constrained to comment within the operating mandate of the Centre.

After a decade, governance of ILCA and ILRAD had settled with reasonable comfort into the TAC model that subordinated Boards. Viewed from that perspective, TAC-commissioned reviews were an instrument of governance used to foster conformity with other CGIAR centres. Conflicting messages to Boards and perverse incentives led the ILRAD Board into management, despite ILRAD being registered as a company under Kenyan corporate law in stark contrast with ILCA's clearer multinational institution status. While Boards were recommended to develop strategy, major decisions including the strategic redirection of ILCA, and ILRAD's purchase of the major capital item, Kapiti, remained the preserve of TAC – which was further empowered when the World Bank funded donor shortfalls. As engagement in governance across 13 CGIAR centres began to stretch TAC, the viability of the mixed governance approach would come into greater focus.

Both Centres were unusual in the CGIAR group, ILRAD being narrowly focussed on two diseases, and ILCA being extremely broad geographically and in adopting a farming systems approach. Governance remained opaquely spread across Boards, TAC and to a less extent Management and may be seen as an underlying cause of some direct criticisms in the reviews. With the funding and operational environment for the Centres shifting, new governance strains would arise, as introduced in the following chapter.

Chapter 4

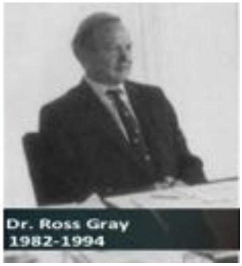
Marking Time: 1987-1992

Towards the 1990s, reductionism within a scientific discipline was shifting towards interdisciplinary approaches that linked basic to applied research. In contrast, the CGIAR model based on Green Revolution success retained elements of discipline specificity oriented to technological fixes. Within CGIAR, ILRAD's narrow scientific focus on the one hand and ILCA's integrated farming systems on the other, set them apart from the dominant cropping Centres. At this time, advanced livestock disease research was increasingly linked to extension and economic analysis, which might have been expected to broaden ILRAD's activities. ILCA was called upon by CGIAR to accommodate redefinitions around 'sustainability' and 'agroecology' as if its integrated program somehow excluded such considerations. These and other forces were operating while new applicants for CGIAR membership were being encouraged and donor attitudes were changing. Unrestricted 'core' funding was beginning to give way to restricted funds, which introduced a risk of research becoming diluted into downstream development projects. In this period when such trends were emerging reviews of each of ILCA and ILRAD took place.

The separate review reports of ILRAD[78] and ILCA[79] reveal developments affecting governance and the operations in CGIAR. The now established cumbrous process of comment and reporting delayed public release of review reports until after International Centers' Week, as described in the previous chapter. In addition to the now routine review procedures, TAC appointed a common member to the two reviews and required that they canvas the feasibility of merging the two Centres.

ILRAD: 1987-1992

During this period, ILRAD had three Board Chairs, Jahnke (1987 – no image found), Månsson (1988-90) and Nielsen (1991-94), and one Director-General, Gray (1982-94). Donelson had been nominated ILRAD Director-General-designate.



The third review of ILRAD – an External Program and Management Review – was chaired by Vercoe.[80] The Board Chair at the time was Nielsen and the Director-General was Gray who was due to retire in 1994. Most commentators on the review agreed with its sentiment that, as it was the most strategically focused Centre within CGIAR, ILRAD required a longer-term research commitment than was common in the System. However, the reality of the uncertain annual funding mechanism raised such questions as; "should ILRAD concentrate its core research on animal diseases and contract biotechnology research to outside laboratories?", and "how can ILRAD better incorporate client perspectives into its program development?". By comparison, the review found that of the 15 and 37 recommendations made by the previous separate management and program reviews, 11 and 24 had been implemented. The review considered these to have been the main practical recommendations.

Such an apparently acceptable response to the previous review was in contrast to a series of specific criticisms, some of which might be seen to reflect the colonial origins of ILRAD. For example, the majority of international staff originating from the United

Kingdom and Ireland (44 percent) was raised as a concern. Of these, 24 percent had been at ILRAD for more than ten years, and another 24 percent for more than five years. The review recommended that this cultural bias be corrected and that the proportion of women in the international ranks be increased. Table 9 presents a breakdown, assuming that all national staff were Kenyan.

Table 9. ILRAD International Staff by Nationality, and National Staff, 1992.

	Africa: Kenya + other	**Asia**	**Australia**	**Europe**	**UK + Ireland**	**USA**
International Staff	8 + 9	4	1	7	32 + 3	12
National Staff	c.341					

The review sought to re-orient research so that laboratory science operated in a practical social and environmental context. As a component of strategic planning, such a governance decision required recasting the Board to reduce its scientific dominance to allow increased development experience oriented to 'clients', and to ILCA. As the same recommendation had been made by the review five years earlier, failure to enact the change possibly reflects a Board view that TAC exercised control over major decisions. Apart from details, little seemed to have changed in governance arrangements over the five years.

The previous review had revealed ILRAD's registration as a Kenyan company, which was now seen as a reflection of 1974 Kenya not having been equipped to deal with registration of multinational organisations. Signed by the Kenyan Ministry of Agriculture rather than the Ministry of Foreign Affairs, the Memorandum of Agreement complicated the importation of goods. Hence a new Memorandum was to be signed with the MFA. This afforded an opportunity – that was missed – to clarify the role of the Board with respect to outside groups such as CGIAR.

Increasing uncertainties about funding pervaded all aspects of the review. At first this appeared less an issue for ILRAD as it had, through sound management and serendipity, created reserves that could cushion sudden funding droughts to an extent. Two conflicting lessons of future value were emerging; the need for a managed means to replenish reserves, and the disincentive to do so while CGIAR oriented fungible resources to Centres without adequate reserves. At this time however, neither the Board nor Management had moved to source alternative income streams including Centre-generated income. In the absence of such a strategic direction the review recommended that an ILRAD fundraising task force should be established.

Wider than policies about reserves and fundraising, financial oversight remained inadequate. The Board's Finance Committee was charged with covering audit, budget and financial oversight but lacked sufficient financial expertise for the role. Referring to external audit, the review commented that "the functioning of the Finance Committee … was much less impressive, with the Committee appearing to rubber stamp Management's submissions". While reflecting confidence in Management, the review noted that the Finance Committee Chair was "a scientist with no credible financial qualifications". The system was akin to that of a government departmental in which budgets were assigned from above for execution by functionaries, but it is readily arguable that this was never an appropriate model for responsibly using and accounting for funds contributed from diverse governments and agencies. The point is worthy of note concerning this period when donors were becoming more fiscally aware and experiencing competing demands for their funds. The system of the Finance Committee simply endorsing the Program Committee's budget for implementation through the year until shortfalls were advised by TAC demanded much more careful Board governance than the "unacceptable" performance rated by the review.

The Program Committee continued as the central Board committee with its orientation to science and technology that flowed indistinguishably into Management's responsibilities. Apart from sidelining the Finance Committee, this dominance limited the Board's oversight capacity. Yet the Board seems to have gently rejected recommendations for change by replying that its Nominating Committee "will continue to take such matters into consideration". Rather than a non-sequitur, this might be read in conjunction with the Board's forthright statement that "historically the Board has tried to balance membership skills and backgrounds to encompass the relevant biomedical sciences, population based sciences, donor interests, development expertise, and administrative experience." Perhaps the Board was saying that ILRAD was like private vaccine research groups where a 'board' was a high level advisory group. This attitude might explain the Board's constant reference to the review as the EPR (External Program Review) rather than its actual designation of EPMR (External Program and Management Review).

The Board also maintained a Training and Outreach Committee, a Nominations Committee that was to introduce performance evaluations, and a Compensation Committee that determined the salary and conditions of the Director-General, the Deputy Director-General, the Director of Administration and possibly other senior staff. Many of these seemed to encroach on Management's bailiwick. The Executive Committee operated as a subset of the Board to conduct business between Board meetings, but also met during Board meetings when the full Board might otherwise have attended. This led to two classes of Board members, which apart from being inequitable probably also indicated an uneven quality among Board members – a product of prescriptive positions and a desire to use Boards as training grounds. Induction of new Board members was by immersion, which for inexperienced new members meant they were unable to contribute substantially to governance and so drifted into more familiar management matters. The review suggested an orientation process for new members, which raises the question

as to whether they meant governance orientation to ILRAD or CGIAR. Board member interviews revealed to the review that "they recognize that they are representing the various interests of the CGIAR System" while also looking to "the well-being of the ILRAD staff, especially its scientist members."

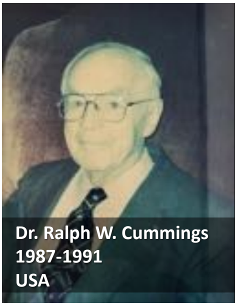
With such confusion of its roles, it is somewhat surprising that the review found ILRAD's Board to function well and to understand its oversight role. This is intelligible if both the review team and Board saw the Board's oversight role as acting on behalf of TAC, which would confirm that little change had occurred in either party. Within that paradigm, policy proposals could originate with Management through the Director-General and be examined by the Board, which would refer major variations, decisions or indeed some functions to TAC or a TAC-commissioned review. This extended to the governance function of monitoring performance of the Director-General, which was conducted through a survey done by the CGIAR Secretariat. A further indication that the review saw the mixed governance arrangement as appropriate was their acceptance of a role in redefining the direction of research strategy, one element of which was increased interaction with ILCA.

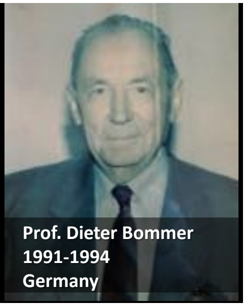
ILCA: 1987-1992

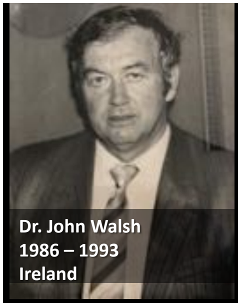
During this period, ILCA had two Board Chairs, Cummings (1987-91) and Bommer (1991-94), and one Director-General, Walsh (1986-93).

The Chair for the ILCA review was Halse, and at the time of the review the Board Chair was Bommer and the Director-General was Walsh who was to step down soon afterwards. CGIAR at this time had embraced a new rhetoric that vaguely supported self-reliance rather than self-sufficiency, coordinated institutional development, and increased management and conservation of natural resources. Structural changes were implied in this vision,

which would see Centres grouped according to commodity or ecological mandates. ILCA was spread across the two categories.







More clearly than the ILRAD review, that of ILCA noted that Centres were "coping with funding resources that are greatly reduced relative to requirements envisaged in the Centre's TAC approved Medium-term Plan". This created two general anomalies; some directives of TAC became less practical, and recommendations from reviews that called for additional funds were even more impractical. Nevertheless, the goodwill that existed between the TAC, the Board and Management allowed sufficient dialogue for workable solutions to evolve.

Other components of ILCA's external environment were also changing, including improved policy implementation in many countries, high population growth, and accelerated growth in smallholder dairying, especially in and around cities. In seeking to understand the changes, ILRAD and ILCA joined with the Winrock International Institute for Agricultural Development for an assessment of Animal Agriculture in sub-Saharan Africa that projected a quadrupling of demand for livestock products by 2025.[81] Within this context the ILCA review advised the Centre to "narrow the focus of its mission".[82]

The breadth of ILCA activities and its orientation to working with National Agricultural Research Systems (NARS) was seen to be a strength and a possible cause of a poor publication record. High

staff turnover, low staff morale and lack of impact joined the criticisms, which were seen to be a “consequence of the lack of a well-focused operational mandate”. Such opinion was not new, yet reviews had contradicted themselves by stating that the mandate remained appropriate. The time had now come to clarify the purposes of ILCA through a “rigorous review of its programme priorities when developing its medium-term proposals”.[83] In making this statement TAC was vetoing a recommendation for ILCA to create an additional ecoregional centre for the highland zone of Ethiopia. This was clearly a governance function that TAC was continuing to assume for itself; there is no indication of the Board entering an opinion on the subject.

Research programs were spread across milk and meat from cattle and small ruminants, animal traction, livestock policy, animal feed resources and trypanotolerance. They involved small farmers and pastoralists in semi-arid, subhumid, humid and highland zones. Potential ambiguity in the review in its emphasis on strong disciplinary foci at the same time as ILCA maintaining its “comparative advantage in interdisciplinary work based on a farming systems approach” may be understood as a recommendation that strategic research “should focus on problems identified from the farming systems studies”.

As for past reviews, these comments derived from ILCA’s broad mandate. From its beginnings in assembling baseline socio-economic data, ILCA’s first review required it to make greater technical interventions, which having been done led the second review to recommend even greater focus. ILCA’s responsible approach was to develop a strategic plan around six themes, which formed the basis of research between 1988 and 1993 with a proposed increase in budget from US $19.8 million to US $36.5 million. The plan addressed 52 of the 78 recommendations of the second review while some others were negated by budget shortfalls. Such change required close interaction between the Board and Management and may be seen as a step towards increased Centre governing capacity.

The strategy based on ten-year, five-year and annual plans was submitted to the Board and from there to TAC. At the same time one of the principle elements of TAC's dominance over Centre governance was potentially weakening as its control over budgets became less absolute. Covering research, training and communications, the five-year plan, known as the Medium-Term Plan, was the main document used for formulating annual plans and budgets submitted to TAC. While the review suggests that "there were unrealistic expectations as to the resources that would be available", it is not at all clear that TAC was able to provide guidance as to the reliability of donor funding. The impacts of annual budgetary shortfalls were reduced by clever management of overlapping projects, which must have included agreement with the Board Program Committee as it continued to join in management decisions. Such a management approach may have compromised the intent of the plans, for example to further centralize research on Addis Ababa.

Research staff numbers in 1986 and 1991 were coincidentally the same. In 1986, of 60 international staff and 47 researchers, 23 were based in Addis Ababa, while in 1991, 17 were located in Addis. The constant total does not reflect staff stability; about two-thirds of the 1987 international staff present were still present in 1991 and the 60 international positions had seen 116 different appointments in the period with around half being from the UK or Europe. The review ranked staff as being only moderately ambitious and spread too thinly across zonal locations and research thrusts. The Board seemed unconcerned with these matters despite claiming responsibility for human resource management, and being engaged in negotiations with their host country.

Revision of the host country agreement with the Ethiopian Government led to ILCA being defined as an "organization enjoying, for purposes of privileges and immunities, a status comparable to that accorded by the Government to international

organizations operating in Ethiopia".[84] This clarified ILCA's status and operations. Across the same period, ILCA had based a team at ILRAD and developed cooperation with IITA, IFPRI, ICRISAT, IPGRI, CIAT and ISNAR, and was hosting staff from CIAT, IFPRI, ICRISAT, CIMMYT and CIP. This was possibly the greatest indication within all of CGIAR of governance responsibility shifting towards the Board of a Centre. It also highlighted the need for increased capacity on the Board.

Board membership was constitutionally limited to between 12 and 17 members and at the time of review was 14, made up of the Director-General ex officio, and two members designated by the Government of Ethiopia, four by CGIAR; of the seven others, at least three were expected to be African nationals. Board processes had been strengthened by a clearer Board Secretary role, a formal election process for the Chair and Vice-Chair, and the possibility of two members of ILRAD and ILCA being able to observe each other's Board meetings. However, the full Board still only met once a year and conducted most activities through committees.

Identified deficiencies in Board composition remained unaddressed with the Nominating Committee failing to find suitable candidates for at least three years, and being cavalier in its appointments, not requiring checks or references of nominees. The Executive Committee effectively functioned as the Board, which resulted in "a significant proportion of the Board not feel[ing] adequately informed" about audit, for example. The Program Committee continued to be engaged in research management more than oversight. These were not new criticisms and in revisiting the 1985 review's concern about strategic planning, goal setting and prioritization, delineation of roles and general Board oversight, the 1992 review observed "great improvement in each of these areas". While 30 years later it is difficult to discern if this is just peer politesse seeking to mollify other criticisms in the documents, it is clear that the review expected the Board to have become more proactive. For example, Management had been left to design and implement a plan

without Board examination or approval. However as this was simply continuing past behaviours, a question arises: was the review perhaps leading both TAC and the Board toward a more durable governance system?

Improved governance also required deleting excessive implementation detail in Board meetings, taking oversight of finances seriously and, notwithstanding the review's confusing allocation of human resource management to the Board, adhering to defined roles for governance and management. To provide a flavour of the milieu: long written reports were read verbatim by management; substantive discussion was limited; materials were voluminous; some members were hesitant to speak; meeting procedures were variable. Nevertheless, in general it worked – primarily because, as the review noted, a good relationship existed between the Board and the Director-General.

All such comment was made within the paradigm of TAC-cum-CGIAR Secretariat retaining much governance authority even as its influence began to decline as it lost control over funding. Perhaps this was an additional fillip to the System's 1989 creation of a Board orientation program, which highlighted the assumption that Boards were instruments of CGIAR and accordingly new Board members needed to know CGIAR's objectives. It also incidentally showed that some Board members had little or no governance experience. Yet none of these points seemed to be of major concern, even at this time when corrections to the 1980s excesses led to tightening of corporate governance in donor nations – and when the Centres' funding environment was changing.

Budget shortfalls and funding reallocations introduced variations from the planned research as indicated in Table 10. These were compounded by an increased proportion of restricted funds in budgets and ILCA's reliance on 40 percent of its budget coming from two donors – the World Bank and USAID. Responding to this new financial environment, Management more than the Board

acted to maintain a working capital float to cover 90 days trading, creating a capital development fund to cover asset replacement, investing reserves responsibly – and adding donor fund raising to the Director-General's duties. The governance triad of TAC, Board and Management appears to have continued, as it had for ILRAD.

Table 10. Actual (in brackets) and Budget per Research Thrust, 1988-93[85]

	1988	1989	1990	1991	1992	1993
Budget (USD mill)						
Plan	11.5	12.9	14.4	16.1	17.0	18.0
Actual	11.5	12.6	13.0	13.2		
Percent per Thrust						
Cattle	26 (22)	27 (24)	28 (28)	30 (26)	30	30
Small Ruminant	15 (13)	20 (17)	20 (17)	20 (16)	20	20
Animal Traction	17 (18)	17 (18)	18 (16)	18 (15)	18	18
Animal Feed	22 (23)	15 (17)	13 (14)	10 (16)	10	10
Trypanotolerance	13 (17)	12 (14)	10 (13)	9 (16)	9	9
Policy & Resource Use	7 (7)	9 (10)	11 (12)	13 (11)	13	13

Merger Mooted

Moves towards merger were afoot among the agencies that maintained an interest in ILCA and ILRAD, including the World Bank and Rockefeller Foundation. Some of these discussions may have excluded the Centres themselves, although a statement deep in the ILRAD files implied that the former ILRAD Chair had mooted the idea at least by 1991. It stated: "After all, science and the actors have changed in 20 years. What does animal agriculture need in terms of strategic research? Where does ILRAD have its comparative advantage? What are the problems and how can the donor community best address these problems? . . . ILCA and ILRAD should get together to look at the management and control of disease constraints to productivity. . . . The two institutes should be brought together in some appropriate way so that there

are stronger disease and scientific inputs into ILCA and [so that] ILRAD can make use of ILCA's established networks. Production and disease are really one thing and it is an historical (political) accident that there are two centres. . . . This will undoubtedly mean a change of role for ILRAD but must not destroy the competency in science that ILRAD has. . . . ILRAD can continue to be useful . . . by [making] incremental changes in its programmes and by expanding the scope of its programmes as they are required. . . . ILRAD is not separate, but part of a system which it can influence, whilst needing to be sensitive to the influences of the system. 1992 will be the period for change. . . . ILRAD must do something new and become outward looking."[86]

The reviews had been asked by TAC to canvass the possibility of combining ILCA and ILRAD into a single organisation, which in turn provided channels for the Boards and Managements of the Centres to comment. The ILRAD Board responded that it saw no benefits in merger, preferring cooperative projects with ILCA for field testing. The ILRAD review itself went marginally further in suggesting joint activities for program planning, sourcing of funds and evaluations and overlapping Board memberships. The ILCA review took the approach of listing both the advantages and disadvantages of merger. Advantages included: priority setting for factors limiting animal production that are wider than animal health; a single livestock institute with common support facilities; one Board and one Management, and creating a greater critical mass of scientists. Against these, it listed disadvantages as: being of little benefit to ILCA's thrusts with the exception of the trypanotolerance and socio-economic activities; limited scientific benefits with the exception of animal reproduction and health, and the difficulty of recruiting a Director-General of the required high level and broad background. Regardless of the advice, and TAC's formal agreement to limit integration of the Centres to some common Board membership, the idea of a single livestock Centre was firmly back on the agenda, and the agenda was dictated by TAC.

The established governance system of TAC assuming precedence over Boards continued through the first half of ILCA's and ILRAD's second decade. In seeking to widen the focus of ILRAD and narrow that of ILCA, the respective reviews recommended various improvements in Board governance. However, such sound advice was compromised by the Boards' limited influence and capacity even when opportunities arose such as revision of ILCA's agreement with Ethiopia. Board governance roles such as monitoring the Director-General's performance and high-level strategy approval remained with CGIAR. By the 1990s, donor funding was becoming less reliable, which in turn weakened the nexus between plans and execution and potentially challenged the authority of TAC. Regardless of this trend, TAC charged the reviews to consider merging ILCA and ILRAD although the only public awareness of this by 1993 was the appointment of some common members across the two Boards.

By 1992 the viability of a governance system reliant on goodwill across Boards, Management and CGIAR might have been called into question by changing donor attitudes and funding. Personalities were as dedicated as their predecessors, but seemed to be drawing on experience from national research systems, universities, the World Bank and FAO. Such agencies each shared elements with the comparatively tiny ILRAD and ILCA yet the sum of that experience was proving inadequate to cover the whole of the unique governance needs of the Centres. But such trends were not fully recognized, which allowed suggestions of merging ILCA and ILRAD to be canvassed by TAC largely without consultation of their nominal governance bodies, the Centre Boards. The move toward merger is discussed in the following chapter.

Chapter 5

Towards Merger: 1992-1994

The livestock Centres might have received a fairer treatment in the CGIAR System if they had originated as separate centres for major species as was done for the crops. Livestock in general had been overlooked in the Green Revolution – perhaps understandably given its focus on additional dietary calories, but by the 1990s livestock was known to be critical in the nutrition, health and livelihoods of hundreds of millions of marginalized people and in environmental management. As the World Bank consistently guided CGIAR, it is useful in the evolution of governance to refer to expert opinion on the Bank's role in international agricultural research Centres, which refers to livestock as one of the "themes aired too infrequently around the Bank".[87] The Bank's focus on government clients might have even led to assumptions that such livestock as pigs and poultry were catered for in the private sector. Yet the private sector "rarely contributed to the income or the rural poor and often products were not affordable by the same underprivileged group".[88]

The Bank had initially sponsored international agricultural research on the basis of its extremely high rates of return. However, the Bank's mandate made it difficult for it to provide grants, and lending for national research systems was more complex than for direct development projects. This produced the anomalous situation that Bank staff were often unable "to find a readily applicable package of technologies on the shelf for their project area and [the Bank seemed] reluctant to increase core support for the CGIAR".[89] Some informed minds suggested the gap could be ameliorated by enhancing the relationship between Centres and the Bank by appointing Bank staff to Centre Boards and by their participating in reviews and meetings of Centres.[90] In

the case of livestock, such Bank staff as de Haan were to make significant linkages through their Board roles.

Overall, the Bank-CGIAR nexus remained functional. Perceptions that it could be improved might simply be a reflection of the inadequate understanding of the business of research and trans-sovereignty research projects, and transient administrators. It is therefore unsurprising that the opinions of more than 30 otherwise well-informed parties did not share a single common conclusion. In general, most agreed that donors were becoming increasingly unreliable in meeting their own pledges for international agricultural research, which oddly led their representatives to suggest that there were too many CGIAR Centres. These changes in donor funding and opinion left the Bank in an invidious position: "as Co-Sponsor and donor of last resort, the World Bank has played a crucial role in ensuring the development of agricultural technology. Should the Bank give up this role and behave just like other donors, the Winds of Change could easily become the Kiss of Death".[91] The Bank later relinquished its 'last resort' funding role but before that time it was to influence the merger of ILCA and ILRAD amidst the rising 'Winds'.

Although formally noted at the establishment of ILCA, the process towards merger of the livestock Centres can be documented from 1991, and according to official documents a proposal had been formulated even earlier but was only presented and approved at International Centers' Week in 1992.[92] This was the same meeting at which the reviews of ILCA and ILRAD were presented. A TAC discussion paper[93] on livestock research, a Winrock International report[94] and other reports[95] were also tabled. Failing to reach agreement from the ICW meeting, the CGIAR Chair commissioned a Working Group to advancing the discussion and hopefully build consensus. The resultant Working Group reported to the CGIAR Mid-Term Meeting in 1993.[96]

The mood of the time, coloured by the knowledge that core funding for CGIAR Centres was becoming less secure, was that livestock could command additional funding from "a more visionary, multi-disciplinary, multi-institutional, impact-directed approach and strategy". Accordingly, the Working Group recommended; a unified visionary research strategy and a revised "management structure to establish policies and provide oversight". That last phrase suggests that the Working Group viewed the policy and oversight roles to be management rather than governance functions. These comments appeared to apply to all CGIAR Centres, and in that sense imply that the ILCA-ILRAD integration was intended to be the first of a series of intended Centre mergers.

The Working Group, chaired by Davies, considered that CGIAR allocations to livestock research were "about right". Having said that, it observed that overall international funding was likely to decline while at the same time rising environmental concern and fiscal accountability were adding costs. The Working Group's solution was for CGIAR to seek non-core funding and advance a new visionary strategy. Focusing on livestock, this opened a range of options including placing a time limit on immunological research, contracting-out advanced laboratory research and integrating nutrition research with CGIAR regional Centres. Whether these suggestions were adopted or not, the Working Group emphasized that "no change [was] not an option".

TAC's scenario presented to the 1992 International Centres Week included global expansion for ILRAD and focussing most ILCA work on a single eco-region with other regions being coordinated through CGIAR regional Centres. The Working Group dismissed this option as having "been overtaken by events", and proposed a hybrid option that combined a greenfield ideal with adaptation of existing approaches. Their proposal was to be advanced by a further team to develop a strategy that assumed core funding for livestock programs would be at least maintained. Additional funding was also to be attracted by innovative and flexible appeals

to donors' environmental and sustainability concerns that could be funded on a bilateral basis. Such bold assumptions for the times went unchallenged, and were soon proved false.

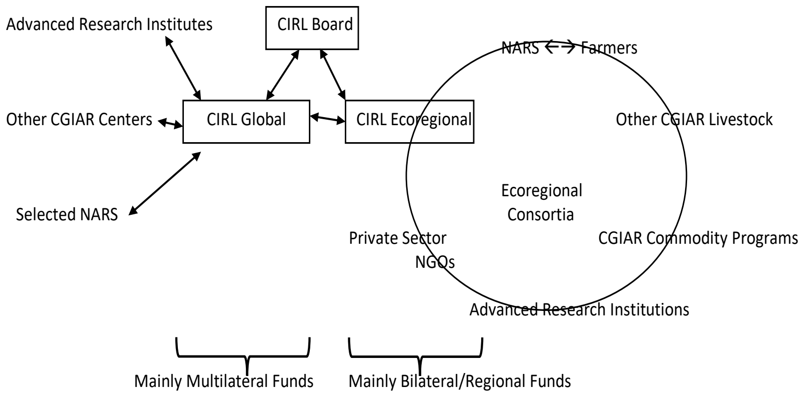
It was claimed that various documents all pointed to the desirability of merger. The team was therefore charged to report quickly and fully before the 1993 International Centres Week after which it could refine a strategic document over the subsequent year. The usual assumption of CGIAR that Boards were little more than their Program Committees led to the proposal that joint planning should be undertaken by the ILCA and ILRAD Program Committees. This seems to have been assumed to automatically lead to a joint Board arising that would produce "a unified center within the next five years".[97]

The group formed for the next stage of the livestock research discussions in May 1993 was called a Steering Committee, which was chaired by de Vaccaro and included the Chair of the 1992 ILRAD review, Vercoe. In its report to the 1993 International Centres Week it recommended; a focus on ruminants in mixed production systems, development of a unified strategy, immediate integration of such areas as training, information and forage germplasm, and establishment by January 1995 of a new livestock Centre "based on the relevant programs of ILCA and ILRAD" to define a Systemwide livestock strategy. This vision of a large integrated and global livestock research effort coordinated through a well-equipped Centre was to receive "assured" multilateral core funding and additional new sources of funding that "must be urgently mobilized".[98] These institutional and funding arrangements were represented in Figure 1, which employed the then current acronym CIRL – Centre for International Research on Livestock – for what was to become ILRI.

Referring to several reports supporting the importance of livestock in international research for development and the possibility of integrating the two existing CGIAR Centres, the

Steering Committee agreed that CGIAR's strong comparative advantage in the sector justified expansion to Asia and Latin America for semi-arid, sub-humid and highland cool tropics ecosystems. Claiming that "the main constraints to production of [cattle, sheep and goats] in developing countries have been amply documented" seven research areas were to make up the global Centre's disciplinary structure, viz; health, nutrition and physiology, genetics, feed resources, production systems, natural resource management, and policy. This focus was congruent with documentation prepared earlier by TAC[99] and was to operate within the goal to "improve productivity of high priority livestock and their integration into sustainable production systems".[100]

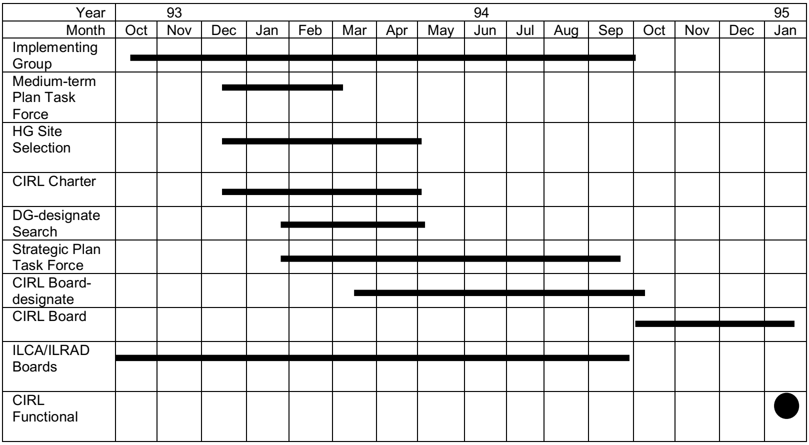
Figure 1. Institutional Linkages: CGIAR Livestock Research Strategy[101]



To effect the integration of ILCA and ILRAD, it was proposed that memberships of the future Board be selected to provide a broad vision of livestock problems and potentials across a range of disciplines. The future Board would be involved in "the development of the strategic plan and administrative arrangements" and "capitalize on the experience of ILCA and ILRAD" by including current Board Chairs, Directors-General, representatives of the two host countries and one existing Board member from each of ILCA and ILRAD. Nominations were to be subject to CGIAR approval. Apart from the Board, an

Implementation Group would oversee the change process that included two task forces for the strategic and medium-term plans. All changes were to be done rapidly because speed "reaffirms the Committee's [TAC's] conviction" to merge the Centres. Figure 2 reproduces the proposed workplan for the merger, again using the working name of CIRL for what was to become ILRI.

Figure 2. Summary Workplan for Establishing a Unified Livestock Centre[102]



The decision to merge the two livestock Centres had become irreversible after the 1993 International Centres Week. The matter had been deliberated behind closed doors before it was mooted in select circles and then formally presented in stakeholder meetings. Of course, it had also been suggested in 1974 when the separate Centres were created, and the opportunity missed. The 1992 reviews of each Centre, as discussed in the preceding chapter, were both available to the 1993 ICW and both had recommended against merger. The almost parallel study conducted by the Rockefeller Foundation involved the same Centre staff as the two reviews, yet its strategy was for a merged Centre. As often, official documents in such circumstances can omit key political machinations. In the event, CGIAR through TAC and donors buoyed the Boards along toward merger, which led to the creation of ILRI in a much shorter time

frame than was either common for other CGIAR decisions, or that recommended by the Steering Committee. The governments of Denmark, Ethiopia, Kenya, Sweden and Switzerland, and the UN Environmental Programme signed to establish ILRI on 21st September, 1994.[103]

The events for the period 1992-1993 consolidate observations about CGIAR-Centres governance raised in the preceding chapters. Influenced by the World Bank through its coordination role, cadre of specialists and remedial funding of mercurial donors' commitments, CGIAR/TAC, Winrock International and the Rockefeller Foundation deliberated about merging ILCA and ILRAD without fully sharing proposals with the Centres' nominal governance bodies. Successive TAC-commissioned studies advanced the proposal until a clear path for merger emerged, which was supposed to attract incremental funding through bilateral grants. While largely sidelined, the ILRAD and ILCA Boards rose to the challenge and enabled accelerated creation of the merged entity ILRI with a Board drawn from the ILCA and ILRAD Boards. Far from indicating a shift in power between TAC and the Board(s), the action affirmed the past hierarchy to the extent that in this case Board nominations were to be subject to CGIAR approval.

While the governance role of the Board had not been clarified, ILRI had been created with a promise of the combined budgets of ILCA and ILRAD supplemented by additional funding from bilateral sources. The bald statement was contained in documents that were tabled at the same time as others concerned with unfulfilled donor pledges and indications of reduced future donor commitments. Without conjecturing whether the anomaly represents naïve aspirations or disingenuousness on the part of the powerbrokers of the time, the promised budget of future years was to be an order of magnitude less than promised, as introduced in the following chapter.

Chapter 6

A Single Livestock Centre – ILRI: 1994-1996

Rejected as a proposal at the time of ILCA's formation, many nevertheless thought that ILRAD and ILCA would one day become one Centre, just as they also saw that the crop Centres would logically be unified. The reviews of ILCA and ILRAD that found little benefit to such a merger must be read in the knowledge that peers from the livestock research sector mostly came from home institutional structures where animal health was, often unproductively, separated from production. But neither national research bodies nor the UN-style organisations familiar to some CGIAR players provided good organisational models for the integrated and targeted international research for development of a CGIAR Centre. In any case and as described in the preceding chapter, merger machinations were being advanced in parallel with the 1992 Centre reviews. Overlapping membership of review teams and the merger Steering Committee[104] served the outcome desired by TAC, which could have been detected in successive reviews' recommendations to broaden the activities of ILRAD and narrow those of ILCA.

Credibility for organisational change in the 1990s was usually sought through association with authoritative studies, which in this case was conducted under the auspices of Winrock International and the Rockefeller Foundation; both favoured an integrated approach for global livestock research through a single Centre.[105] The single Centre was to expand to a global mandate serviced through a 25 percent increase in scientist appointments and an even greater budget increase that would dwarf the combined total of the early 1990s ILCA and ILRAD budgets. These CGIAR commitments made in the knowledge of the decline in donor core funding were made appear credible by implications that core reductions were an aberration and that incremental

budget would be made available as restricted bilateral funds from the same donors. Informed administrators would have been aware that the core funding decline was not a temporary aberration but in fact a change in aid administration following increased accountability across other sectors in major donor nations. Informed research governance and management experts would have been aware that bilateral funding would reduce the ability to centrally plan research, and hence undermine the authority of CGIAR in Centre governance.

If such informed voices existed, they do not appear to have enjoyed an influential platform. One consequence of the poorly timed merger was that plans for global expansion from sub-Saharan Africa could never be fully realized, at least in the CGIAR operational mode. Consequently, ILRI's budgets were to remain constrained until after 2012 by which time bilateral funding direct to ILRI was the major source of income. The trend having begun at the time when ILRI was created might have been expected to give rise to a more autonomous Board for the legally autonomous Centre; but established norms within CGIAR precluded such innovation – perhaps because continuing Board members had much on their plates, such as resolution of ILRAD's legal status in Kenya.

To effect the creation of ILRI the peculiarities of ILRAD's status as a private Kenyan company as distinct from a multinational organisation had first to be accommodated. The result was a Kenyan Act of 1993 in which ILRAD was assured of having "the legal capacities of a body corporate" with privileges and immunities of an international organisation. The privileges and immunities extended to any international employee of ILRAD residing in Kenya and performing duties in its service.[106] While this governance action had been necessary for some time, it is noteworthy that it occurred during the period that merger was being planned. Subsequent actions in ILRAD also suggest that the location of Nairobi as the main ILRI headquarters was intended before the matter was discussed with other host countries, and

that such matters were determined by parties outside ILRAD and ILCA. Notwithstanding words defining the role of Centre Boards, host countries dealings with UN bodies may well have caused them to assume that it was normal for governance to exist in a distant land.

The procedure for ushering ILRI into existence, according to a letter from lawyers advising ILRAD, required the ILRAD company to be placed in voluntary liquidation between October 1994 and May 1995.[107] This was to be triggered by the ILRAD Board resolving that ILRI assume all ILRAD research activities after ILRAD had paid all outstanding creditors and had passed a special resolution to voluntarily liquidate ILRAD. It was further suggested that the process could be facilitated by each director of the ILRAD appointing an alternative director who was resident in Kenya, as was permissible under Article 59 of the ILRAD Articles of Association. The Kenyan government would transfer the lease of the land on which ILRAD operated to ILRI. The shares owned by ILRAD and its nominees in Kapiti Plains Estate would similarly be transferred to ILRI after securing "Kenyan Exchange Control consent to the transfer from the Central Bank of Kenya and a stamp duty exemption notice for such transfer with the assistance of the Kenyan Government". While legally straightforward, such a proposed arrangement for a multinational organisation today appear unusually risky – and at the time may have challenged the capacity of the Board.

The birth of the International Livestock Research Institute (ILRI) on September 21, 1994 was hosted by Government Switzerland as the depository nation and sponsor for the creation of the international Centre. Other sponsors for its creation were; Ethiopia, Kenya, Denmark, Sweden and the United Nations Environment Program. The inaugural meeting of the ILRI Board followed immediately in Berne on September 22-23, convened by Herdt of the Rockefeller Foundation, which had been appointed as the Implementing Agency by the CGIAR. As the CGIAR was still not a registered organisation, it was presumably the World Bank

acting on behalf of CGIAR that appointed, which would explain the cumbersome process of requiring such agents as an Implementing Agency and perhaps even an Implementation Advisory Group.

The foundation ILRI Board was nominated by the Implementing Agency following recommendations from a Search Advisory Committee of the Implementing Advisory Group. One nominee was rejected on advice from a donor nation in what sounded like a shareholder action. Appointment of Kenyan and Ethiopian Board members was delayed until after the location of ILRI's official headquarters had been agreed. During the first meeting, Clarke was elected as Chair of the Board with the right to appoint a Vice Chair.[108] Determination of an official headquarters for the new organisation was a sensitive matter entrusted to the Board Chair and key members. Administrative matters inherited from ILCA and ILRAD were to be integrated as far as possible by the Boards and Management of both ILCA and ILRAD over the ensuing three months that they continued to exist.

An implementation plan for ILRI's contribution within the CGIAR strategy had been prepared in consultation with the parties above after consultation with the Boards of ILCA and ILRAD, their Managements and staff. The strategy was rubber-stamped by the newly formed ILRI Board by noting that it would be updated during the coming year. They accepted the Indicative Medium Term Plan introduced the new global mandate and assumed the significantly increased budget consistently referred to in the Steering Committee's and other documents.

Concurrent with these actions, the TAC-inspired global livestock strategy also called for a Systemwide Livestock Program (SLP) to coordinate activities related to livestock across all CGIAR Centres. Part of an intended series of similar Systemwide Programs, the SLP was an attempt to create a mechanism for interaction that could function across the autonomous Centres in different countries with different legal frameworks. Other such attempts of coordination were to follow over the subsequent quarter century,

with increasing overhead costs in each new iteration; one analysis counted 20 such attempts at coordination.[109] Initiated by TAC with a budget of $4 million, the SLP began with $500K until donor commitments could be firmed up at the forthcoming International Centres Week. The SLP was managed by Smith to build linkages between Centres[110] by being global, ecoregional, multidiscipinary and sustainable in focusing on a few broad research areas including feed resources, livestock production and socio-economics. It was a clear sign that governance decisions of the newly formed ILRI were to remain as they had been, with CGIAR's TAC – and this was seen as reasonable and workable for programs fully funded through CGIAR, but increasingly many projects were not funded through that channel.

Minutes of the initial meeting of the ILRI Board observed that the creation of Systemwide Programs such as the SLP represented CGIAR "moving rapidly towards a fundamental paradigm shift in which there will be increased emphasis placed on outcome of programmes which transcend participating CGIAR institutions". It was further anticipated that "donors may well find these programme initiatives attractive relative to more traditional institutional funding". Buoyed by such rhetoric on top of promised additional funds, the newly constituted ILRI Board saw a "unique opportunity" for ILRI to "emerge as a pace setter in implementing the new paradigm" within CGIAR by designing the ILRI Strategic Plan around the SLP initiative. In proposing this orientation, it was noted that "the CGIAR global strategy for livestock research calls for ILRI to also actively pursue a convenor role for all livestock and livestock related research across the System". Thus enthused, the Board charged the erstwhile ILCA Director General, Fitzhugh, to meet with other Centre Directors-General to advance the SLP and ILRI's role as its Convenor.[111] The SLP was to influence much of ILRI's future and related activities across the CGIAR through a complex matrix management system.

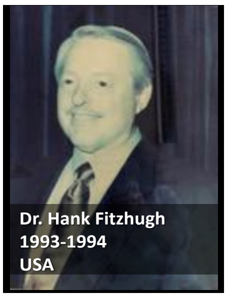
At the following Board meeting, Fitzhugh was appointed as ILRI Director-General for five years. Board functions were to be

conducted through Executive, Program, Finance and Audit, and Nominating committees with the Chair and Director-General being regular members of the Executive Committee and ex-officio members of other committees. Personnel policy developed by the Board was to be managed by the Director-General who was also to integrate administrative systems and training from ILRAD and ILCA while unification of the research program was to be advanced through development of a Medium Term Plan,[112] presumably to mirror major aspects of the SLP. In this developmental phase of ILRI, the ILRI Board seemed to be assuming a greater governance role than had generally been the case in the forming institutions.

Meanwhile in the same year of 1994, ILCA and ILRAD Boards had held their final meetings and duly agreed to “dissolve themselves in favor of ILRI” with “all obligations … associated with governments, institutions and individuals” remaining in effect. The first investment decision arising seems to have been construction of a containment facility to continue research for production of a theileriosis vaccine. The $1 million cost was considered possible from ILRI’s reserves of $10 million in the light of promised future funding. The sensitive issue of the designation of ILRI’s official location was resolved by accepting Ethiopia and Kenya as co-hosts with equal status,[113] each having substantial investment in infrastructure; Nairobi was named as the official Headquarters.[114]


Dr. Neville Clarke
1995-1999


Dr. Charan Chantalakhana
Vice Chair


Dr. Hank Fitzhugh
1993-1994
USA

By the next meeting, in early 1995, Board minutes assumed a more conventional format and listed ILRI Board members. The Chair appointed Chantalakhana – the leading Southeast Asia livestock researcher and a past member of TAC – as Vice Chair; other members were also mainly drawn from the ILCA and ILRAD Boards with due attention to CGIAR's political guidelines of the time. The host country agreement with Kenya had been signed earlier and was celebrated during the meeting[115] while the agreement with Ethiopia was not to be finalized until mid-year.[116]

As the Board settled into a routine, it drifted into allocating more time to research and the Program Committee. This led to the next meeting being scheduled to coincide with the annual staff conference with its three days of presentations of research activities. Program Committee members assumed research overview roles in their areas of expertise, and it was proposed to commission research reviews of the groupings of policy and production systems. The Board approved annual research plans and also involved itself in the higher level management of personnel matters. The Board also wrestled with the Kapiti Plains Estate company that it had inherited from ILRAD; incorporated under Kenyan company law, Kapiti had fallen between the CGIAR and Board stools and consequently had not been adequately addressed in the merger arrangements. It presented a challenge in terms of whether it should continue as a private company or be made "an integral part of an International Organisation". The decision was seen to rest on whether Kapiti was primarily to produce disease-free animals or to be used more extensively in ILRI research.[117] As CGIAR took little interest in Kapiti, decision-making about its use and status was to continue as an indicator of Board governance.

Financial documents indicated 1995 assets of ILRI to be $12.9 million and reserves sufficient for 99 days operation. In approving the annual budget the ILRI Board congratulated "both ILCA and ILRAD management for their prudent fiscal management which allowed ILRI to start its operation from a healthy financial

position". The budget included reduced administrative expenditure, expanded activities in Asia and greater integration of existing programs. In seeking additional income sources, the Board remained wary of being diverted from its mission when it accepted restricted bilateral funding, and apparently remained unaware that core funding was likely to continue to decline.[118] In the outside world, general changes in the allocation of development assistance were clear by this time and there was a rising sentiment that the golden age of international grant aid was ending.

By September 1995, the representative from Ethiopia had been named. The Board now addressed matters that in a future era would be deemed the responsibility of Management including staff reorganisation, salaries and details of research projects. Shortfalls in funding of around $1 million were now foreshadowed, and surmising that this was a short-term phenomenon, it was determined that this could be managed by savings in order to leave reserves intact. For 1996, the shortfall was suggested to be up to $2.2 million. Within this environment, funds also had to stretch to new work to Asia for which ILRI foresaw livestock bases at IRRI in the Philippines and ICRISAT in India.[119]

Research planning was informed by internally commissioned reviews, such as one concerning production systems research that identified such issues as; "upstream vs downstream" research, ILRI visibility in partnership situations, uptake of research results and the need for terminating some projects. Alignment between ILRI research programs and the SLI (SLP renamed as System Livestock Initiative) became problematic. Even though the SLI was coordinated by ILRI, it relied on other Centres' participation in fundraising for three-year projects that had to be managed within annual funding horizons. Any increase of the role of the Board in strategic planning was again complicated by CGIAR not immediately following the SLI with other promised Systemwide Programs and not adjusting to reduced funding. Nevertheless,

work continued on an ILRI medium-term plan to integrate and rebrand ILCA and ILRAD programs, expand activities into Asia and include the SLI.[120]

In 1996 the Board continued to improve its governance by clarifying its own responsibilities vis-à-vis those of management, and requiring improved responses from Management. The processes that the ILRI Board inherited from ILCA and ILRAD were no longer sufficient for the changing financial environment and ILRI's global mandate. CGIAR took a passing interest in the functioning of Centre Boards at this time but showed little awareness of conventional governance procedures or changes that were occurring in the corporate legislation of donor nations. If the Board had taken some steps forward in some of its initial actions, it now retreated by creating a Human Resource Committee as an extension of its Nominating Committee and again engaging itself in general personnel matters including salaries. At the same time the Board saw the Program Committee as its central committee, which engaged all Board members in developing a 15-20 year research plan for ILRI.[121]

SLI funding shortfalls were now of significant concern to ILRI, and the Board responsibly determined that they should not be met from ILRI's reserves. In an attempt to spur donors into meeting SLI commitments, the ILRI Board Chair met with the CGIAR Chair while the Director-General interacted directly with donors. Minor successes were insufficient for the SLI vision. Coupled with this funding shortfall, the Board commissioned reviews of all major ILRI programs in order to better inform modifications to the now impossible research plan – and to introduce the new rhetoric of outputs as a means of demonstrating impact.[122]

By the second meeting of 1996 the Board had effectively confirmed its main focus as research detail on which it proffered advice. A medium term plan included establishment of an Asian presence at ICRISAT and continued treatment of SLI as a guide for ILRI's program design. Issues of funding uncertainty and

inadequate payment for operational overheads appear to have been managed by the Board requiring Management to find efficiencies while Management preferred to access reserves.[123] By this time, two years since ILRI's birth, the Board had settled most merger matters and established a pattern for its meetings that defined its view of the Board's role. It was slightly different in function to the Boards of ILCA and ILRAD, and it was not seeking to resolve its governance anomaly with CGIAR.

The first two years after the creation of ILRI offered an opportunity to address livestock research more thoroughly in both geographical and disciplinary terms. It also offered an opportunity to increase the role of the ILRI Board by reducing CGIAR influence while increasing its accountability to the Centre. However, as CGIAR had been the merger master, its influence flowed automatically into the new Board's worldview; during the immediate post-merger period the ILRI Board assumed more of a governance role and then partially slipped back into pre-merger norms of overlapping with Management's realm. Promised CGIAR funding around which ILRI had based its plans also failed and by the time the Board realized the implications its opportunity for its greater autonomy had passed.

The integration of ILCA and ILRAD to create ILRI with a wide global mission had glossed over a rising funding emergency and incautiously designed an expansive program. With the ILRI Board constrained by ties to CGIAR, the Centre's progress was destined to involve diverse challenges, as revealed by the first review of the new institution, which is discussed in the following chapter.

Chapter 7

The First Five Years of ILRI: 1995-2000

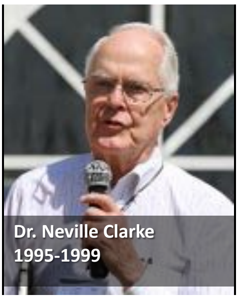
The first review of ILRI was conducted in 1999 in an environment that appeared to confirm the role of CGIAR in Centre governance. In the UN-style, CGIAR commissioned the ILRI review by describing itself as "an informal association of over 50 members that supports a network of 16 international research centres in agriculture, forestry and fisheries". The 'informal association' continued to state that "each Centre is an autonomous institution operating within the mandate assigned to it by the CGIAR, and is governed by a legally constituted Board that has full fiduciary responsibility for managing the Centre. To ensure accountability in an essentially decentralized system, each Centre is expected to be responsive to the CGIAR, which provides financial support for its work."[124] It was thus clear that, although 'autonomous', each Centre's Board was expected to be fully responsible for the Centre on behalf of the 'informal association' of the CGIAR. CGIAR on the other hand implies that it contracts to supply the necessary funding. Even if the latter were to be true, which it no longer was, the governance model seemed to be a chimera of a government department and a UN sub-program.

In creating ILRI, the retention of key Board members from ILCA and ILRAD favoured continuity of past norms. Yet the onus on the Board as the legally responsible body had begun to increase as corporate regulation and contract law became more stringent in some donor nations. Meanwhile, CGIAR continued its practice of five-yearly reviews, on which the Board, Management and CGIAR relied for making changes, often in a variation of Cornford's 'principle of unripe time'.[125]

The review's terms of reference state that the "CGIAR has established a tradition of External Programme and Management

Reviews (EPMRs) to provide a mechanism of transparency and accountability to the Members and other stakeholders of the CGIAR System. EPMRs are the joint responsibility of TAC and the CGIAR Secretariat, and are conducted for each Centre approximately every five years. As each Centre is autonomous, EPMRs provide a measure of central oversight and serve as an essential component of the CGIAR's accountability system." As in the past, no consciousness is evident of the inconsistencies inherent in the roles and responsibilities in governance of the 'autonomous' Centres. The ILRI review was charged to assess the Centre's mission, strategy and priorities as well as the quality, relevance, effectiveness and impact of the science and management.[126]

Nearly five years after the creation of ILRI with a global livestock mandate and a convenor role for livestock-related research across 16 CGIAR Centres, the ILRI review was chaired by Jutzi; at that time the Board Chair was Clark and the Director-General Fitzhugh who had continued in that role from ILCA. The Chair of the previous review of ILRAD and participant in CGIAR merger deliberations, Vercoe, was also a member of the ILRI Board at the time of the review.



Reflecting advances in electronic documentation and communication, the review report covers a wide spectrum and was well accepted at the CGIAR Mid-Term meeting, which deftly shifted responsibility for shortfalls in the CGIAR budget to the

Centre and in addition considered that the Centre should seek full recovery of overhead costs for the SLP/SLI "and other restricted-funding projects".[127] The Mid-Term meeting was informed by TAC's summary of the report, which acknowledged the difficulties in unifying the cultures of ILCA and ILRAD, and criticized the absence of progress in updating the strategic plan, the unsatisfactory ranking of one-third of research projects, and again wondered whether pigs and poultry should be added to work in Asia. In responding to the review, ILRI highlighted the increasingly limited funds compounded by a decreasing proportion of them being fungible, which constrained exploratory, longer-term and upstream research.

Finances were central to all aspects of the review since ILRI's plans were predicated on a budget significantly greater than the combined budgets of ILCA and ILRAD. TAC had indicated that ILRI would receive nine percent of CGIAR donor funds in 1998, which had been around US$30 million and would in any case have represented a decrease when compared to the combined totals of ILCA and ILRAD in 1990 of US$34 million. To make it worse, despite TAC's commitment to allocate nine percent of the CGIAR total, only 7.2 percent (US$23.8 million) was received. The ILRI Board and Management responded by generating some additional income, selling assets and drawing on Centre reserves to raise its total operating expenditure for 1998 to US$27.4 million. The reasons for CGIAR commitments not being fulfilled reflected reductions in donor contributions and inter-Centre pressures within CGIAR. The first was a result of global economic changes, competing demands for donor funds and declines in contributions, particularly from USAID. The second resulted from other Centres arguing for a change in the allocation of World Bank funds to match funds for other CGIAR funding. The compounded effect for ILRI was a loss of about $2 million in 1995, part of which was later compensated by a special CGIAR grant.

Two major implications flowed from these changes; first, ILRI now needed to seek other funds, which were usually tied to

specific projects, and second, credibility of the authority and reliability of CGIAR and TAC as its instrument had declined. In response, ILRI Management successfully canvassed bilateral funding and produced a rise from US$4.5 million from 25 donors in 1995 to US$12.0 million from 36 donors in 1998. The Board grew into its new responsibility as Centre-sourced funds rose and the reliability of core CGIAR funding fell. It required Management to present three budget scenarios for 1999 of which it approved the midpoint budget of US$27.5 million on the basis of funding probabilities. The trends of funding for the livestock Centres from 1990 to 1998 are presented in Table 11 – figures are current for their years meaning that the decline in purchasing parity terms over time was greater than these figures indicate. The merger had disadvantaged international livestock research, in some cases to the benefit of other Centres.

Table 11. ILCA, ILRAD and ILRI Funding Totals, 1990-1998 (USD mill)[128]

	ILCA	ILRAD	ILRI	Total
1990	20.9	13.1		34.0
1991	19.8	13.4		33.2
1992	16.2	12.7		28.0
1993	11.8	10.3		22.1
1994	14.0	10.6		24.6
1995			23.8	23.8
1996			24.8	24.8
1997			24.9	24.9
1998			25.1	25.1

The decline in unrestricted core funding that had formed 79 percent of the ILCA plus ILRAD budgets in 1992 to around 48 percent by 1999 – compared to an average of 63 percent across all Centres – contrasted strongly with the undertakings made in agreements for the merger of the Centres. ILRI's success in sourcing unrestricted bilateral funds partially compensated but left the long-term and essential preliminary upstream programs in jeopardy. It also introduced a need for subsidizing bilaterally funded projects that notoriously underprovided for overhead costs. Management's response to Board concerns led to

efficiencies in overheads and their inclusion in project proposals that recouped about 11 percent when overhead costs ran at about 18 percent of project costs. At the same time, the Board maintained a clear policy of preserving reserves as far as possible such that in 1997 reserves totalled US$9.7 million – US$5.7 million in the capital fund and US$4.0 million in the operating fund – sufficient for 52 days operation compared to the average for other Centres of 45 days. This included staff leave and repatriation costs. The ILRI Board must have noticed that CGIAR was rewarding Centres that had been less diligent.

The merger had some effect in highlighting the need for change in governance roles, in this case between the Board and CGIAR, even though the latter's level of influence was waning. In tightening its governance of ILRI finances, the Board was acting responsibly, which appropriately led to the review clearly stating that an effect of ILRI's improved governance was to be penalized financially by CGIAR. Official documents are polite in criticisms, but one can speculate as to the reasons proffered; the most plausible seems to be that lesser performing Centres asked for and received "special crisis funding", which in turn further reduced the available unrestricted funds of CGIAR. This collateral effect of funding unreliability in the CGIAR System continued unabated and gave rise to a competitive environment for the declining core funds while some Centres, including ILRI, stumbled into greater autonomy. An essential ingredient of the mixed governance system for ILRI had now broken down.

Since the creation of ILRI, both the reliability of funding from donors and the consistency of CGIAR adherence to its commitments had waned while the responsibility assumed by the ILRI Board had waxed. The inaugural ILRI Board had accepted the strategy and budgets provided at merger by CGIAR/TAC and in September 1996 reaffirmed the strategic plan "as the guiding instrument for ILRI's plans and priorities".[129] That plan had been formulated by the Rockefeller Foundation,[130] which had been CGIAR's selected Implementing Agent for the merged Centre.

However, the Rockefeller Foundation was not acting in the mode of a donor as it had in the earliest days of CGIAR but as a consultant, and the plan was offered on an all-care-no-responsibility basis. It was up to CGIAR/TAC to conduct due diligence and proper business planning complete with a credible budget.

To advance planning, the Board commissioned five reviews between 1995 and 1997 to inform development of a Medium-Term Plan, to little apparent benefit. It approved a 1995-97 Medium-Term Plan followed later by that for 1998-2000 and in both cases sought and gained TAC agreement to the plans. However in addition to the constrained funding environment, ILRI's subscription to the Rockefeller Foundation plan caused the Centre to work more closely with NARS for which capacity development was the first requirement – and was very poorly funded. In addition, the expanded global mandate also required new modes of working, which was constrained by an increasing proportion of funding being tied to specific projects and locations. The review commented that "there is a strong need to clarify what ILRI will do with fewer resources in this context". The implication was that CGIAR should make up the funding it promised in the merger package.

It appears that the Board had accepted increased responsibility born out of resignation that CGIAR could not meet its commitment. Personalities had changed as had donor circumstances and both allowed CGIAR to wash its hands of past commitments. In effect, CGIAR was becoming a nominal 'window' through which funds passed in the banking terminology that the System euphemistically adopted. Nevertheless, CGIAR/TAC retained great influence in ILRI strategy and policy. This fraught separation of responsibility from authority also appears to have been the reason that the Board provided the review team with some elements for a revised strategy, perhaps expecting that as TAC's agent, the review could advance the process. This surmise seems to be confirmed by the review comment that "there is no

analysis of strategic planning, adjustments in the strategy, nor are major changes addressed to shape ILRI's vision and direction. The Panel concluded that budget constraints and funding anxieties do not leave room for discussion of strategic matters." Clearly a review could not advance a strategic plan, and it sheeted the responsibility back to the ILRI Board.

After rating the Board meetings and communication as exemplary, the review contradicted itself by noting that no formal mechanism to translate policies into action existed. The comment applied especially to policy decisions about programs, which were explained to new Board appointees as background in a Board orientation process. Board committees followed past forms with the exception of an Audit Committee being renamed the Finance Committee in an attempt to deal with the variable financial environment. The Finance Committee worked in concert with Management, which although effective in management terms compromised the Board's role of oversight and challenge of budget proposals. The arrangement reverberated echoes of earlier modes in which the Board joined with TAC to share governance and with Management to share implementation.

Overlapping roles were again demonstrated in the outcome of the Board having created a Human Resources Committee in place of its Nominating Committee as described in the previous chapter. This meant that the Board now dealt with all staff and so extended its involvement further into Management's realm. Other similar examples from this period include joint Board-Management committees for; resourcing core programs, intellectual property, biosafety and bioethics, and in particular attendance of Board members at week-long annual research program meetings. The review noted this "unusually blurred" relationship between the Board and Management and suggested that it had led to the Board's inability to make strategic decisions. One consequence was that successful mobilization of additional resources was not matched by well-governed allocations but rather were spread over too many activities. In Board meetings, "implementation

issues were raised that are appropriately within the prerogative of Management and about which Board members are not likely to have sufficient information to make a decision. On the other hand, Management's presentation to the Board seemed to invite such incursion into its prerogatives."

In order to assist in defining the line between the Board and Management, the review advised the appointment of a Deputy Director-General to oversee research, planning and priority setting, to promote collaboration and to define resource needs for research. The review went even further in suggesting the consolidation of research into the five programs of: animal genetics and genomics; animal disease control; system science, impact, and policy analysis; production systems and animal nutrition, and international cooperation. Publication services had already been consolidated at the Addis Ababa campus and continued to include English-French translations, editing, type setting and production services for maintaining a database that in 1999 indicated distribution of ILRI publications to hundreds of libraries. International relations continued those developed by each of ILCA and ILRAD and were especially sound for the host countries of Kenya and Ethiopia, NARS and other programs and Centres, notably; CIAT, CIP, ICRAF, ICRISAT, IFPRI, IITA, IPGRI, ICIPE and ICOMOD. As was the case for its antecedents, ILRI was productive despite its confused governance.

ILRI continued to coordinate the SLP/SLI, which involved nine Centres and was now one of 17 belatedly created Systemwide CGIAR programs.[131] CGIAR's inability to meet the funding targets continued until 1997 when the World Bank granted an additional US$2 million, which allowed ILRI to appoint a full-time co-ordinator. The SLP/SLI potentially complemented ILRI's global role, and ILRI sometimes enthusiastically represented it as an ILRI program. In the now competitive CGIAR funding environment this led to issues with partner Centres. While such a competitive environment was usually seen as productive and healthy in leading research universities, it seemed have been misunderstood

by some donor representatives and was to periodically resurface as unequivocally undesirable. ILRI also participated in the Systemwide Genetic Resources Program, which aimed to add animal and forage genetic resources to an otherwise crop-based agenda. At this time, TAC became enamoured with agroecological zones for a "gradual transition in the organization of the global agricultural research system to meet the sustainability challenge".[132] It should have now become clear to the ILRI Board that Systemwide and other initiatives might be fine CGIAR ideals but they came without ongoing funding. With such clarity would have come the conclusion that TAC influence in Centre governance on the assumption of its initiatives were viable posed significant risks to ILRI.

After five years, the 1990s vision of the CGIAR to expand the System, admit new Centres and to merge existing Centres had exacerbated the blow of its declining funds. This had doubly jeopardised ILRI through its expanded mandate as well as it being treated as one among the Centres rather than the two it had been, and being the only merger. The golden image of merger increasing funds, producing synergies and achieving economies was now seen to have been founded on feet of clay;[133] both ILCA and ILRAD knew parts of sub-Saharan Africa but did not know other developing regions, both concerned aspects of livestock but not the whole spectrum of animal science or species, both necessarily operated in a manner different from other Centres but had been tacitly assumed to be similar to crop Centres. Amidst these emerging realizations, the ILRI Board had risen to a level of Centre governance that was in some ways more mature than the understanding in CGIAR, except that the Board continued to defer to TAC in a manner that compromised Centre autonomy. In doing so, the Board probably had little time to consider the ongoing irregularity of its major capital asset, the Kapiti ranch.

The Board had been handed an almost impossible task and had succeeded in effecting a functioning Centre. This was even more remarkable considering that it was now seen as an unnatural

merger. As the review notes, "the CGIAR System could have hardly identified two centres which were more dissimilar in their research approaches and institutional cultures than ILCA and ILRAD". ILRAD focussed on basic biological research while ILCA focussed on adaptive animal production research. This made the creation of a functional ILRI a major success of the Board and Management despite the list of governance deficiencies outlined. It was not possible to conclude at this time – nor indeed at any later time – whether the merger was warranted. The 1999 review claims it was, yet it contains multiple details of the failure of CGIAR to support ILRI and instead blaming ILRI for not meeting targets when funding for the activities was CGIAR's responsibility. Counter arguments claim that neither CGIAR nor ILRI could have foreseen changes in donor behaviour; however, changes were evident in the wider aid sector, and in any case it was illogical to expect outcomes from unfunded activities.

ILRI established itself by the Board rising to face funding and geographical challenges hitherto unknown in the CGIAR system. Together with Management, the Board consolidated the merger, calmly responded to CGIAR failures to meet commitments and remained loyal in the face of unfair CGIAR funding allocations. In doing so, the increased capacity of ILRI governance remained compromised by the ill-defined Board-CGIAR partitioning of responsibility and authority. The requirements of governance were rising with changes in the external environment, bilateral funds tied to specific projects without provision for overheads, and the variables of dealing with countries from Africa to Asia. In the face of such change, ILRI governance also had to change.

With the merged entity of ILRI now consolidated, the exigency was for proper business planning including reliable budgets with contingent actions for variations that allowed credible means for expanding into Asia. These matters are considered further in the following chapter.

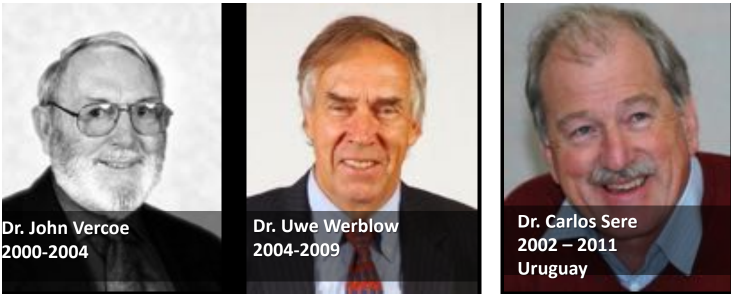
Chapter 8

Entering the Millennium, ILRI: 2000-2006

In the period since the previous ILRI review, TAC had been replaced by the CGIAR Science Council and this became the body that commissioned external reviews. In its comments on the review, the Science Council agreed in detail on scientific matters, but was largely silent on any matters impinging on governance.[134] This was a divergence from past TAC commentary and rather than reflecting increased CGIAR understanding of the issues created by its involvement in Centre governance, it is more likely that the Science Council saw that it was only equipped to deal with the science aspects of the review. When it came time for the assembled donors and other CGIAR parties to consider the review's outcomes, the issue identified in the previous review of incongruities between CGIAR-endorsed or formulated plans and budget allocations was again begged. Ignoring the circumstances that gave rise to CGIAR budget shortfalls, the CGIAR Annual Meeting endorsed the recommendations of the review but cautioned that ILRI's global expansion "should be an evolutionary process and should be within the framework of a well-structured and financed strategic plan".[135] While such commentary post-dates the review, it is useful to mention these matters by way of introduction to the review itself to further advance consideration of the anomalies in the governance arrangements.

The 2006 review was chaired by Falvey (I declare an interest, but have sought to keep comments objective except for one obvious subjective paragraph near the end of the chapter); the Board Chair was Werblow and the Director-General was Seré. The review was cast in the context of further funding constraints, ILRI's global expansion, and its coverage of multiple domestic animal species. Within that broad expanse, the review found that ILRI had performed well in the recent five years and as a result most of the

review's recommendations were for strengthening current practices. However, there were some areas where change was warranted. The overriding point was that among CGIAR Centres, ILRI was diverse, integrated and dynamic and was not well served by being lumped in decision-making oriented to single commodity crop or even regional Centres.



Dr. John Vercoe
2000-2004

Dr. Uwe Werblow
2004-2009

Dr. Carlos Sere
2002 – 2011
Uruguay

The general environment for international development had also changed with a rising emphasis on poverty alleviation. The review contextualized livestock within that paradigm by listing that: "livestock are often kept by the poorest of marginalized farmers and the landless; general agricultural research, even that conducted on behalf of poor crop farmers, can easily further marginalize the even poorer farmers who keep some livestock; pastoral communities continue to be pushed to increasingly limited land areas that compromise their once sustainable practices; developed country research is not generally transferable to poor livestock keepers; private sector livestock research is oriented to market opportunities which do not exist for poor livestock keepers; in some cases, NARS are oriented to crop-based developments that do not include livestock or may even further marginalize livestock keepers; rising numbers of urban poor keep some small livestock; and livestock often form integrated components of a farm, no component of which can be understood without understanding the overall system."[136] With global responsibility for multiple domestic livestock species,

these points highlighted the fact that ILRI's mandate was under-resourced.

The wider external environment had also changed in this period in such areas as: technological changes in molecular genetics and genomics that attracted private sector research; information technology that enhanced database sharing and communication; legal frameworks concerning property rights of genetic resources; 'CGIAR renewal' which increased meetings for ILRI Management and scientists; and a shifting client base with rising affluence in some target countries. 'CGIAR renewal' at this time was one of its periodic attempts at relevance and was now becoming a cost to ILRI and presumably other Centres as new foci required additional administrative inputs to recast research and staff profiles. However, no mention is made of this in either the review or Board papers. With such pressures on resources, ILRI needed to revise its modus operandi.

ILRI's annual budget in 2006 was US$34 million, which was clearly insufficient for conventional livestock research across ILRI's wide mandate. ILRI had therefore oriented itself to conduct key research while building a foundation for its global collaboration with leading livestock researchers. Accordingly, ILRI revised its organisational structure, which had a revitalizing effect that was evidenced in publications and partnerships, albeit with some dilution in the hard livestock sciences. "External observers may not have noticed this gradual change, which has required planning, management, recruitment, organization and supervision of activities while continuing to meet past agreements and wider CGIAR requirements." In commenting on the main driving force for change the review echoed its predecessors in noting that the ILRI budget had declined upon and after merger; only a small proportion of those losses had been made up by 2005. Table 12 presents an unstandardized summary of the overall financial position of ILRI from 1994 to 2005.

ILRI's budget in 2006 reflected a further rise in the percentage of restricted project support. This required a higher level of financial governance and management. Increases in ILRI's 2005 revenue to US$34.3 million comprised of US$31.8 million from grants of which 55 percent was restricted funding including provision for the Biosciences for East and Central Africa (BecA). However, a fairer comparison of revenue available for the essential research of ILRI can be shown by applying OECD inflation rates. By that measure, the 1994 revenues of US$26.1 million exceeded ILRI's revenues in 2005, which were only US$21.5 million in 1994-dollars after excluding BecA and the project, Improving Productivity and Market Success of Ethiopian Farmers (IPMS) – a decline of 18 percent. "Financially, ILRI was a smaller organization at the end of 2005 than it had been 10 years earlier."

Table 12. ILRI Financial Position – Assets and Income, 1994-2005[137]

94	95	96	97	98	99	00	01	02	03	04	05
Unrestricted Grants ('core')											
20.0	19.7	18.7	15.9	13.3	13.8	11.4	11.1	12.4	12.7	15.1	14.8
Restricted Grants & Funds											
4.7	4.2	6.0	9.0	10.7	12.6	11.8	13.6	14.1	15.9	17.8	17.0
Other Income											
1.3	1.2	1.4	1.1	1.2	1.5	1.8	1.6	1.6	2.1	2.1	2.5
Total Revenue											
26.1	25.0	26.1	28.0	25.3	28.0	25.1	26.3	28.1	30.8	34.9	34.3

In approving use of some reserve funds for facilities upgrading, the Board relied on CGIAR guidelines that did not make specific reference to the unique needs of ILRI and livestock. Similarly ILRI's investment policy, established in 2000, continued to rely on CGIAR worldviews that were not oriented to the needs of livestock research and the maintenance of two major campuses. There was no consideration of risk management or risk appetite in investment practice and the review therefore recommended development of a new investment strategy, a resource mobilization plan and improved grants management. It must have occurred to the Board at least, that there were rising costs in being associated with the CGIAR and that they presumably considered them to be less than the benefits of CGIAR membership.

With an increasing proportion of restricted grants that underfunded project overheads came further substantial costs of resource mobilization by ILRI to replace the lost core funding allocated by CGIAR. A more complex management task thus arose to monitor the duration and size of multiple projects that came with differing demands for reporting and evaluation. Table 13 indicates that, while ILRI had the weight of funds in projects longer than two years and could therefore relate them to the medium-term plan, the large total number of small projects inflated management overheads.

Table 13. Grant Durations as of May 2006[138]

Duration	Number of Grants	Percent of Total Grants	Total USD (million)	Percent of Funds
Less than one year	43	30	2.7	5
One to two years	34	24	7.6	14
Two to three years	33	23	10.5	19
More than three years	32	23	34.9	63
Total	**142**		**55.8**	

Since the previous review ILRI strategy and planning had become focussed, particularly since 2002. It was able to simultaneously address the multiple roles of livestock in poor people's lives, global livestock issues and the 'Livestock Revolution' – jargon for rapidly increasing demand for livestock products particularly in Asia. Management allocated unrestricted funds to CGIAR priorities while donor strictures and stakeholder interests made it difficult to balance the overall strategy. Based on a mission to secure assets of the poor, increase their livestock productivity and improve market opportunities, ILRI research operated through 17 'Operating Projects', including SLP/SLI projects, grouped for example under themes of: Targeting Opportunities and Enabling Innovation; Market Opportunities; Biotechnology; and People, Livestock and the Environment. As most poor livestock keepers

resided in South Asia and Sub-Saharan Africa, ILRI's large investment in Africa meant much effort continued there while new activities in South Asia were complemented by projects with ICRISAT. At the time of review the majority (94 percent) of International Research Scientists were based in Africa. Three factors constrained ILRI from quickly expanding outside Africa; meagre resources, a large African asset base and a majority culture oriented to Africa more than Asia. Restructuring of the staff profile had changed the disciplinary base more than geographical and cultural diversity. The Debre Zeit field station was now deemed to be surplus to ILRI's requirements and was handed back to the Government of Ethiopia in an amicable agreement.[139]

The expansion of ILRI into Asia provides an example of the impracticality of centralized decision-making that separated governance influence from responsibility. ILRI was charged to expand from Africa to Asia with a significantly increased budget under the mixed governance arrangements of the mid-1990s, which included donors, and CGIAR through TAC. The requirement to expand became a responsibility of ILRI while the reciprocal responsibility for donors to provide the promised resources through TAC for the expansion was abrogated, and overall funding even fell to below previous levels. From today's perspective, it might have been expected that proper governance would have secured funding for planned operations, resolved the high fixed-costs of maintaining two large campuses in Africa, and considered building on a major livestock research agglomeration in Asia. Considering the many constraints placed on ILRI, its expansion into Asia could be considered one of its institutional successes. Lessons clear to the ILRI Board and Management flowed from this experience into the deliberations that were to lead beyond the Consortium into a subsequent CGIAR reform. It was therefore hardly surprising at that later time that there would be a wariness focussed on the fragility of promises to double real funding, and on arrangements that increased centralized administration.

In addition to its defined strategy, ILRI also managed the two large projects mentioned earlier – BecA and IPMS. BecA was intended as a hub for regional nodes of laboratories and organisations with interests wider that livestock and for substantial capacity development of African researchers. Headquartered in ILRI laboratories that were upgraded with Canadian funding outside CGIAR core funds, BecA introduced an additional burden of governance and management that was further complicated by the involvement of NEPAD as co-creator.[140] ILRI provided all support services, recruited staff, procured goods and services, prepared assessments and reports for contributors and donors, administered funds and shared them with a BecA Steering Committee. The BecA Steering Committee reported somewhat casually to the Board but was more oriented to meeting the demands of the political lobbies beyond available resources. If it was the Board of ILRI that did not allow such a major investment to become completely autonomous since it relied on ILRI facilities and expertise, this was a sound governance decision. The other project, also funded by Canada outside the strategy and CGIAR, was IPMS, which purported to test the application of innovation systems, but actually contained elements of a development project. For that reason the review recommended against projects such as IPMS and suggested means for rounding off the remainder of the IPMS contract. Each of these projects brought around $20 million through ILRI accounts.

Research quality in general was managed through a Science Advisory Panel that ILRI had specially created for informal and unbiased evaluation of its work; the Panel functioned in parallel with the similar body for BecA. These bodies, and ten independent reviews commissioned by ILRI since the previous external review, informed Management's proposals for Board endorsement. Staff changes played a role in ILRI's research output of some 368 papers in peer-reviewed journals during 2003-2005, which was lauded in KPI terms but also reflected an increased orientation to economic more than technical research. Economic research also

possibly assisted ILRI to be ranked as the second-most common Centre for collaboration with other CGIAR Centres – joint activities were listed with CIAT, CIP, ICARDA, ICRAF, ICRISAT, IFPRI, IITA, IPGRI and IWMI in addition to engagements via the SLP/SLI. The review suggested that economic expertise was over-represented among ILRI researchers and implied that this might have been a result of perverse incentives in CGIAR policies that the Board continued to follow.

As the proportion of restricted grant funds rose to exceed the 'core funds' that had been a key success factor for CGIAR reaching into ILRI governance, the Board continued to deepen its governance responsibility. The review deemed the ILRI Board to be "effective by CGIAR standards", but in retrospect it is not clear whether this was intended to be in comparison with other CGIAR Centres, or to imply that 'CGIAR standards' differed from the norms of governance, or both. While acknowledging improvements in defining boundaries between the Board and Management, the review noted the need for improvements in; financial oversight, stewardship, role of the Board Secretary, performance appraisal of the Director-General, and Board succession planning that reflected a global mandate.

The composition of the Board reflected past norms where financial skills related to overseeing CGIAR/TAC-allocated budgets in a manner similar to that in national research department or UN-style organisations. ILRI was now soliciting its own funds, which required different accounting and reporting. This introduced needs for experienced budgetary forecasting and made it essential that the ILRI Board included a higher level financial expertise. The review commented that this was in accordance with a separate review conducted by CGIAR[141] – a circumstance that again raised questions about Board versus CGIAR governance authority in the changed funding environment as mentioned below. The same may be said about the CGIAR conducting training programs for new Board members. As the Board woke to its new responsibilities it retained elements of its

past culture and caused the review to insist on the appointment of financial expertise to the Board that "would not exempt the full board from bringing a confident grasp of ILRI's financial life to its work". The Board had seemed content with allowing Management to be guided by financial indicators set by CGIAR, which showed ILRI well above solvency and reserves guidelines. This could easily provide a false sense of security considering ILRI's additional requirements for two expensive campuses and specialist animal research facilities. Cash flow management similarly compared favourably against other Centres but again raised the question as to whether blithely adhering to a generic indicator represented good governance over funds and liabilities specific to ILRI's assets, locations and contracts.

The Board continued to indulge itself in interesting research subjects and so consumed meeting time that might have been better allocated to critical governance matters. Planning and preparation of Board meetings including time allocations and the type and detail of documents presented to the Board needed improvement, and items for action or decision needed separation from those for information. The image conjured by the review was of a Board in transition as it sought to fill the gap left by changes in funding sources. The transition meant that some outmoded practices continued, such as the dominance of the Program Committee, which comprised the whole Board, reporting to the 'full' Board meeting – a repetitive practice that "sustains the fiction that the committee is … a subset of the board"; it also allowed settled issues to be reopened.

CGIAR influence extended into Board composition and diversity; of the 15 members allowable under the Constitution, the ILRI Board elected to retain its size at less than 11 members that necessarily included the Director-General, two host country representatives, and three CGIAR nominees – as specified in the ILRI Constitution at the time of its birth. With more than half of the Board so comprised, ILRI was faced with seeking other members to cover its global mandate and the expertise it required

within other emerging imperatives to which CGIAR subscribed, including gender and developing country membership. Within these constraints it was inevitable that the Board struggled to meet the strategic governance responsibilities for ILRI's global mandate. On some points the review complicated matters by supporting integration of research support and corporate services with the other Nairobi-based Centre, ICRAF, for research methods, human resource strategy, IT platforms, financial policies, procurement services and through joint membership of Boards. Administrative services such as IT could be shared but most of the other suggestions were excessive and overlooked differences between the modes of operation of the two Centres, and their independent and quite different Constitutions.

Governance responsibility to oversee Management was inconsistent in terms of work plans, delegation and performance of researchers, which may have explained why the Board retained an active Human Resource Management Committee. More positively, the review noted that by 2006 the proportion of Western nationals among Internationally Recruited Staff had fallen to about half.

The Board also oversaw land assets owned in the form of a residence in Nairobi, which the review advised selling, and the Kapiti ranch. Neither were accounted for as reserves but rather listed as assets at their original costs. The Kapiti ranch in particular added a wider dimension to governance of a subsidiary incorporated outside the multinational agreement that introduced potential risks and unforeseen costs. It was unclear the extent to which the Board understood its responsibility in this regard. Within the CGIAR fold, ILRI had been disadvantaged financially yet had contributed more than any other Centre by hosting 11 other CGIAR Centres and comparable organisations on the Ethiopian campus.

Following the overall review and its assessment of governance, the ILRI Board participated[142] in a suite of 'stripe' exercises

instigated by CGIAR.[143] Including Robinson, who had formed part of the overall review, this follow-up addressed Board procedures in which ILRI was "already in compliance" by being organized, effective and aware of its role, and having reduced its size and strategic focus. Areas for improvement included Board succession planning and evaluation and performance evaluation of the Director-General; somewhat anomalously Board involvement in personnel matters was supported. ILRI, like other Centres, was conceived as a project manager within a US-centric model of 'fiscal sponsorship', a practical system for overseeing disbursed funds from various sources. In placing the onus for fiscal oversight on the Board it could be read as a further contribution to the evolution of governance away from CGIAR/TAC in favour of the Board – but that was not to be a universal interpretation.

In observing that ILRI had successfully integrated its antecedent Centres into one international Centre that was developing a global image, the overall review emphasised the need for a longer term strategy linked to budgeted business plans that included accelerated growth into Asia. Specific recommendations included improved focus on pastoralists and some rearrangement of projects within research themes; but in terms of governance, the main observation was the need for improved financial literacy on the Board as part of Board planning and recruitment processes. While the data was clear, the review missed commenting on the costs to ILRI of relying on CGIAR direction when the majority of business was shifting to be sourced from ILRI's own efforts. In assessing ILRI's governance through indicators of the CGIAR and other CGIAR Centres, no ready comparison with non-CGIAR international research centres was presented.

More subjectively and aided by 15 years' hindsight and subsequent involvements, I add brief comments that may assist in defining the aberrant governance of CGIAR and as a consequence ILRI. TAC having been disbanded, the review was commissioned through administrators and professionals with limited experience in high level research governance who were constrained by

criteria for personnel selection of their host organisations to staff review teams. This meant that review Chairs had limited influence in selecting teams, which were largely sourced from an unmanaged list of persons who had once shown interest in CGIAR; the list, supplemented by that of FAO and an inner circle of favourites, did not uniformly represent expertise from elite research organisations and was known to be a pallid version of the professional registers maintained by international consulting groups. These CGIAR limitations were compounded by ILRI's willingness to be contorted by unrealistic CGIAR demands, which themselves produced bizarre outcomes, as a sanitized example from Asia implied in the review.

As changes mounted in the external environment, donor funding and scientific advances, past norms in the relationship between CGIAR and the ILRI Board became increasingly problematic. At the same time, the role of governance became more critical – the response to these forces is introduced in the following chapter.

The review of the merged entity revealed that past modes of shared governance continued. While the Board was led into increased responsibility as CGIAR failed to meet its own targets and reorganised, old attitudes reinforced by old systems infused new appointments. ILRI governance now oversaw a large number of enforceable contracts with donor agencies in addition to a vague contract for 'core' funding through CGIAR. It also oversaw expansion into Asia where resource constraints precluded sound supervision. Other governance responsibilities continued, including the major asset of increasing local vulnerability, Kapiti. In these and other cases, good practice would have required upskilling of the Board and restricting CGIAR interference in governance and management to mutually agreed guidelines.

Chapter 9

ILRI and the CGIAR Consortium: 2006-2013

In looking back over 40 years of its existence the CGIAR itself concluded that, in addition to the dedicated researchers, its "success is due in part to the way it was organized. The Group itself was an informal forum for dialogue among donor members about research priorities, investment options, and the continuing relevance and effectiveness of the institutions supported. The international Centers constituted the core of the CGIAR. Each was (and still is) an autonomous international organization governed by an international board. The Group and the Centers were originally advised by the Technical Advisory Committee (TAC) of distinguished scientists from developing and developed countries, each appointed as an individual. The Group's activities were facilitated by its Secretariat based at the World Bank in Washington, DC, and TAC's activities by another secretariat based at the Food and Agriculture."[144] Such laudatory comment was largely true, which makes it most curious that the same document marked the first major step in changing the 'way it was organized' to render the successful 'informal forum' into a legal body. From the perspective of the ILRI Board, the statement could only be accepted as an historical observation for the first half of those four decades.

The governance principles of the 'informal forum' had been: informal consensus decision-making; donor sovereignty; Centre autonomy, and independent technical advice. This fortunate mix worked well with strong donor commitment and funding guided by TAC's independent advice, and only began to falter when funding became unreliable. Appeals to donors resulted in additional unrestricted funds dribbling in until in the late 1990s when a major review of CGIAR was commissioned. That review concluded that the CGIAR had been "the best single investment for

[official development assistance] bar none",[145] and in an apparent non-sequitur recommended re-constituting CGIAR to become a legal body with a governing Board and CEO.

Some considered this consistent with meeting modern iterations of the challenges that had spawned the creation of the livestock and other CGIAR Centres. The best informed treatise, which comprehensively reviewed knowledge and experience in international agricultural research and development, revealed the integrated nature of problems and hence the need for integrated solutions. It argued that separate biological, economic, physical, political and social programs were inadequate for the challenge. The only viable solution was concluded to be increased and coordinated investment in science and technology complemented by removal of policy and trade distortions.[146] This could in fact have been a description of the integrated ILRI approach that had evolved from the interdisciplinary base of ILCA, at least with respect to livestock. In any case it was clear that the integrated science approach advocated did not rest on the creation of additional bureaucracy.

Additional superstructure was, however, about to emerge. The CGIAR created an Executive Council and a Science Council and drafted a 'Charter of the CGIAR System' that aimed to encourage cooperation across Centres. In fact, Centres had long cooperated well where it was logical and when there was opportunity. The process began with donor uniformity declining, which a World Bank-commissioned review concluded had led CGIAR to become unfocused and to allocate resources to popular and non-science and non-mandated agendas since TAC had been disbanded. Foreseeing the risk of even more restricted funding, the Bank warned against the creation of CGIAR as a legal entity. Yet moves continued towards a legal entity that became the CGIAR Consortium, which was agreed in 2008-9 when the Bill & Melinda Gates Foundation joined as a CGIAR donor. Boosters claimed that the 'New CGIAR' began with a record budget of $600 million, which smacked of hyperbole to informed parties both inside and

outside CGIAR and in the Centres that saw the real value of budgets when adjusted to parity for the past 40 years.

The CGIAR Consortium did away with three of the four principles that other reviewers thought had made the 'informal forum' of CGIAR successful: decision-making by consensus was replaced by bureaucratic processes; donors were no longer to be sovereign but to coordinate through a Fund Council, and technical advice was no longer to be independent but planned within CGIAR. The confused principle of Centre autonomy was said to continue but the new system was to amplify conflicts in governance for oversight and accountability. The 40-year review of CGIAR concluded that "there was a visible transformation of Center boards from being advisory bodies to becoming governing bodies with the full fiduciary responsibilities expected of autonomous organizations".[147] However, in that 40-year review as in many institutional histories, simplistic associations of events to create a readable narrative can misrepresent details. In the case of Centre governance, the chequered history of the ILCA, ILRAD and ILRI Boards was not a shirking of the role, but rather increasingly uninformed interference in their role by the CGIAR.

The official CGIAR history states that a CGIAR Chair of the 1980s "repeatedly stressed that, although each Center was autonomous in terms of its governance, Centers should act as if they were accountable to the CGIAR".[148] Such a procedure might have been possible if it meant submitting reports rather than being accountable in any way beyond contractual relationships. However, in the event, an expectation developed among CGIAR administrators and some donors that reports were something more than information shared with 'shareholders'. When CGIAR widened its promotional net,[149] its annual reporting further encouraged the image of CGIAR as an overall governing body.

In its previous "unique jellyfish structure"[150] that was said to respect Centre autonomy as a means of keeping decisions about science close to scientists "the CGIAR served as the oversight

body, with TAC and the CGIAR Secretariat as its facilitating arms". The rise in Centre Board functions is made clear by a comment about the earlier decades of CGIAR in which Centres had "been primarily led by their director. The situation has not changed much over the years or across Centers. What has changed is the role played by Center boards."[151] CGIAR might never have had legal control but it initially had a major influence over the Boards and that had become unwarranted as the proportion of funding that bypassed CGIAR to be channelled direct to Centres rose. With increasing awareness of the changing environment, the Centres themselves saw the need to highlight their extensive collaboration with each other and came to see a benefit in federating to present a more united dialogue with donors.

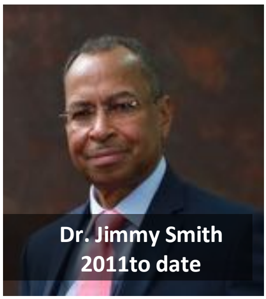
Thus it was, as each of the 15 international Centres grew, collaborated and developed partnerships with NARS, universities, NGOs, the private sector and others, that Centres saw potential in a small efficient clearing house under their auspices. Centres did not see this becoming an international organisation in its own right, although that was already in the minds of some powerful donors. The Centres' federal model morphed into the formation of the CGIAR Consortium of International Agricultural Research Centers on 29 April 2010. In corporate terminology it was an unregistered joint venture of the Centres, which remained the only legally constituted bodies. Then, in what now appears to be an augury, the CGIAR Consortium was registered as an international organisation with its headquarters in Montpellier France in July 2012. "The signatories on the establishment of the consortium [were] France, Hungary, Denmark, Benin, Uruguay, Morocco, Senegal and Colombia [to] ratify and sign the treaty establishing the International Organization as required by the UN Vienna conventions on international organisations, to bring the agreement into force and bestow legal status of an international organisation on the Consortium."[152]

The CGIAR was no longer the "informal association" that it had been for 42 years guided by TAC in its early years and then by the

Science Council for interactions with the autonomous Centres. Its commissioning agent for reviews was now the Independent Science and Partnership Council of the CGIAR Consortium (ISPC). Despite the titular reference to the Consortium, the ISPC was supposedly to report to the CGIAR Chair in order to encourage coherence across research programs involving multiple Centres. An insightful analyst of CGIAR observed that across CGIAR's history there had by now been successive attempts to force Centres to work as one system, including; Ecoregional and Systemwide Programs followed by Challenge Programs and then the CGIAR Research Programs (CRPs) – these totalled more than 20 types of cross-Centre programs, each interfering with Centre governance. It does not appear to have occurred to the ILRI or any other Centre Board that the CGIAR referred to in their Centres' legal charters was the 'informal grouping' and not the new legal person known as 'the consortium'. The System was a long way from the simple functionality of the original vision of CGIAR/TAC and led to bureaucratic creep that increasingly confused the past goodwill-based governance systems of Centres.[153]

The Consortium's new iteration of cross-Centre programs were the 'CGIAR Research Programs' (CRPs), which treated livestock research as both a cross-cutting and an ecoregional theme. The approach complicated ILRI's governance, management, staffing and reporting. Supposedly spanning all Centres' research, a total of 15 CRPs were created and somewhat clumsily categorized into: Systems – drylands, humid tropics and aquatic; Commodities – wheat, maize, rice, roots tubers and bananas, grain legumes, dryland cereals, livestock and fish; and, Natural resource management and policy – policies institutions and markets, agriculture for improved nutrition and health, water land and ecosystems, forestry trees and agroforestry, and climate change agriculture and food security. The ideal of this CGIAR Consortium approach was to integrate Centres through matrices of fully funded integrated projects for major researchable themes.[154]

ILRI and its predecessors over their four decades had engaged other Centres in joint research related to livestock, which had produced close collaborations, in particular with CIAT, IITA, ICARDA and ICRISAT. Transaction costs for those collaborations were low and interactions were based on goodwill and knowledge of the different jurisdictional constraints of the Centres – and on long-term professional relationships. As in many institutional changes, the efficiency and goodwill of these collaborations was undervalued by partitioning into the new CRP paradigm. CRPs were also the response of the newly formed CGIAR Consortium's attempt to converse in the language of the UN Millennium Development Goals. Previous mechanisms for cross-Centre operations, such as Systemwide and Ecoregional Programs (SWEPs) that included the Systemwide Livestock Program/Initiative (SLP/SLI), and then the Challenge Programs were subsumed into the CRPs.[155] The carrot held out to gain researcher commitment was increased research funding, which while the illusion lasted, overcame concern about the erosion of ILRI's autonomy. This led the ILRI Board to accept that the livestock research agenda could be advanced by the new CRP mechanisms.



An ISPC-commissioned review of 2013 examined livestock-related research across the CRPs;[156] it was led by Perry, and at the time the Board Chair was Sibanda and the newly appointed Director-General was Smith. One CRP was concerned primarily with livestock: CRP 3.7, 'Livestock and Fish' was managed by

ILRI[157] although other CRPs also contained research relevant to livestock, such as CRP 4 'Agriculture for Nutrition and Health' in which ILRI led a component. In an attempt to continue to fulfil its mandate, ILRI found itself engaged in eight CRPs in this new CGIAR configuration. The review uncovered the lack of a coherent CGIAR CRP agenda that in the case of livestock followed opportunities more than an integrated strategy. Thus gaps were evident in such areas as: livestock and climate mitigation/ adaptation; feed research; livestock policy; animal health and feed services, as well as in cross-institutional transactions. The review surmised that such gaps would not have occurred if ILRI had continued development according to its earlier Board-endorsed cohesive strategy. However, ILRI's existing projects had been revised to suit the new arrangements and that had placed a new interpretation on the Board-approved strategy. Such insight was largely excluded from the ISPC review, which contained only one passing reference to the ILRI Board. Compounding the obvious additional management tasks and transaction costs, the ILRI Board was faced with a new form of CGIAR engagement in Centre governance through a CRP 3.7 'Steering Committee'.

CRP Steering Committees were assumed by the CGIAR Consortium to be governing bodies and thus represented a potentially more serious incursion into ILRI governance. As for most successful operations across the System, this melange was managed through goodwill between researchers and advisers who knew of each other's work. Nevertheless, the cumbrous reporting lines required of CRPs reinforced the CGIAR Consortium acting as if it was governing CRPs even when the majority of the research was funded through contracts sourced and signed by ILRI directly with donors. Perhaps this anomalous situation was a wish that the new arrangements could be a contemporary means of returning to the halcyon 1970s. If that was the case, it might explain why some CGIAR functionaries thought that they were performing a function similar to that of TAC in the past in quality appraisal and funds channelling. This misunderstanding was possibly aided by the funding for projects sourced directly by ILRI

being aligned with the CRP after the ILRI strategic plan was recast into the CRP language. In any case, the Board and Management were caught between accounting directly to donors, including the Consortium office for funds received through that channel, while also responding to that office's expectation that all activities be reported to it. The result was increased administration that diverted resources from research. Despite widespread goodwill, there was a lingering tension over roles and responsibilities between the CRP Steering Committee and the ILRI Board, albeit less so than in some Centres. In the case of the ILRI-led CRP, deft management ensured significant impacts from the research.

Changes introduced by the CGIAR Consortium's Strategy and Results Framework (SRF) were accommodated alongside a number of other factors specific to livestock that had recently been raised in the international development sector.[158] Accordingly ILRI was advised by the ISPC review to update its strategic plan even while it was already doing so. From 2011 the SRF set out CRPs as if they directed Centres' research and its outcomes, which were now labelled System Level Outcomes. SLOs were grouped into four macro levels: reducing rural poverty; improving food security; improving nutrition and health, and sustainable management of natural resources. This dream of unifying CGIAR research was again reminiscent of the early glory days when donors reliably provided core funding for CGIAR allocation. However, funding was no longer secure, nor was it adequate for the broad SRF ambit – and the majority of projects were contracted to ILRI rather than through the CGIAR Consortium. The ILRI Board responsibly designed its own strategic plan as an autonomous body and acknowledged the risk of CRP funding falling short of promises.

In representing the CGIAR conception as operations having moved "from coordination of commodity and thematic research by the 15 Centres to leadership of 15 CRPs by scientists scattered through the different centres" the ISPC review confirmed the huge increase in the transaction costs.[159] The conclusion was

emphasized when costs were compared for the projects that had been conducted before the formation of the CRPs and had continued within them. In terms of governance and management, the ILRI Board was placed in the invidious position of a CRP leader subordinate to the Director-General reporting directly to the CGIAR Consortium, at least nominally. ILRI managed this through the highest-level staff professionalism, goodwill, transparency and sound management in the knowledge that the arrangements were neither readily transferable nor sustainable.

The ISPC review contrarily assumed that the arrangements were sustainable when they commented that "some Centre Directorates maintain traditional leadership and management structures that appear to complicate the new leadership and management responsibilities of CRPs, raising the question as to whether the CG reform has gone far enough". Such a comment must have been made without consideration of either governance responsibilities for an autonomous Centre or donor preference to direct projects to ILRI rather than through the CGIAR Consortium.

In these circumstances it was perhaps inevitable that CRPs came to be viewed as a means of substituting for the past unrestricted funds known as core funding. However, funding for the main livestock CRP (3.7) and that channelled through other CRPs where ILRI had a major role, did not cover the breadth of ILRI's mandate or its capacity. ILRI was thus spread across six more (of 15) CRPs in addition to leading the main livestock CRP, and it also led components in three other CRPs with responsibilities that extended beyond livestock. One can readily conceive of the benefits of integrating research, and of researchers being eager in such new interactions, but such potential has always been difficult to animate, and in this case was not realized when funding was insecure and governance was complicated. As for other Centres, the governance risks that accrued to the ILRI Board may have been underappreciated at first, but the Board soon corrected this and limited involvement in multiple CRPs. And so the CRPs tended to drift towards alignment with the fields of Centres yet still

retained the confused lines of authority, funding vagaries and high overheads.

With such a dichotomy of perspectives and experiences it was unsurprising that the ISPC review recommended that there was a need for a CGIAR livestock strategy rather than the cross-cutting and piece-meal approach that resulted from the CRP model. The ILRI Board responsibly approved Management's design of a 10-year strategy for the period 2013 to 2022 based on five performance success factors: getting the science right; influencing practice, policy and choices of decision makers to achieve impact; growing capacity; securing sustainable and appropriate funding, and ensuring that ILRI is fit for purpose. These were to be enduring strategies that informed operational plans, met the ILRI mandate and transcended the limitations of CRPs.

Ongoing programs and projects were massaged into three CRP themes – Technology Development, Value Chain Development, and Targeting, Gender and Impact – following the hallmark practice in grantsmanship of adopting new buzzwords to suit thematic trends. But this cast a pall over some researchers dedicated to addressing people-oriented research for development. With the benefit of eight years hindsight, it can be seen that this period represented an acceleration of political agendas driving the allocation of funds and hence the rhetoric of research proposals – and diverting funds from field research. Yet committed researchers that focussed on the marginalised persons dependent on livestock did not all subscribe to such rhetoric. In the pragmatic livestock sector, such specific areas as pathogens, ruminant physiology, genetics and soil-plant-animal-microbe-people interactions would continue to populate proposals and transcend passing jargon and organisational arrangements.

From outside CGIAR, CRPs if noticed at all, were seen as a mode of management that had been tried and abandoned in more developed nations. Yet despite these constraints, sound and far-reaching research continued throughout this CGIAR phase, and

was a testimony to the dedication of high-level researchers, qualified research managers and informed Board members. This commitment to their vocations rendered some recommendations of the successive reviews, such as engagement with NGOs and the private sector, superfluous as such engagement was already established. For example, one that gained global attention was ILRI's pioneering innovation to join with private insurance companies for an index-based livestock insurance scheme informed by satellite data of pastoral areas prone to droughts in northern Kenya.[160] If such impact is mentioned under the CRP mantle, it is as a result of some of ILRI's past actions being rebadged rather than wholly a product of the CGIAR Consortium's model.

This period confirmed differing levels of understanding about the nexus of funding and accountability in governance. Inspired grantsmanship and inclusion of some overhead costs in project proposals allowed ILRI to continue to meet its constitutionally-defined responsibilities. When such changes became evident to new parties in the Ethiopian Government, its representative formally asked the Board why it introduced cost recovery: "is this because of disappearance of core funding? Is this unique to ILRI or other centres also do it?". It was an astute question that received the reply from ILRI that "implementation of this change is absolutely critical to the financial viability of ILRI in a world where unrestricted funds are no longer available to subsidize project costs. So there's a system in place to allocate direct assignable costs in a reasonable and consistent manner."[161] Inflated transaction costs and friction between the Consortium Board and donors encouraged ILRI to seek and quickly respond to new funding opportunities. The CGIAR Consortium model had failed both in terms of its promised efficiencies and increased funding, as was detailed in a scathing CGIAR review of itself.[162]

The registration of CGIAR Consortium as an international organisation in its own right dominated this period, especially once CRPs were created. The old bugbear of CGIAR – financial constraints subverting grand plans – soon caused the ILRI Board to refocus on its essential responsibilities, which it now addressed more fully than in the past. With that intent the Board and Management mollified CGIAR Consortium intent to influence ILRI governance. Separately, polarized viewpoints of the role of the CGIAR Consortium were exacerbated by its conflicts with donors that increasingly allocated their funds directly to ILRI, as for many other Centres. The Consortium approach was seen to have missed its mark, yet the CGIAR remained as an international organisation, and the ILRI Board was coming of age.

The ILRI Board matured further through this period and ILRI's international reputation continued to grow. The Board was coming to realize that its greater responsibilities in budget and finance, audit, and high-level program governance could not be outsourced, even to CGIAR. The Board was also to soon realize that in addition to strengthening its capacity further, planned objectives for Asia required much greater funding than had eventuated, and the valuable asset of Kapiti required attention. These and other matters are discussed in the following chapter.

Chapter 10

Towards One CGIAR – ILRI: 2014-2020

The 2013 creation of the CGIAR Consortium as a separate legal body would have allowed CGIAR to sign contracts in a manner similar to the Centres. Whether this was the intended modus operandi or not, peripheral outsiders assumed that donor governments and philanthropic bodies contracted CGIAR which in turn subcontracted Centres for implementation. In fact, the modes of engagement were more nebulous. In any case, it was possible for some donors, administrators in the Consortium Office, and for Consortium Board members with limited appreciation of the Centres, to incorrectly assume that the Consortium was the governing body above all Centres. Its intended functions as a communication forum with donors, a channel for donor funding and a means of coordinating Centres through CRPs[163] were undermined when donor solidarity inevitably fractured with the exigencies of national politics. By 2014 a review of the model concluded that CRP governance was "complex and duplicative".[164] As a participant in the Consortium model, the ILRI Board had accepted the CRP Steering Committee as a science advisory body that reported to the Board as well as submitting reports to the Consortium Office. The Board progressively increased its vigilance in such oversight as the interests of the Consortium Office were revealed to be more concerned with administrative than governance or scientific matters.

By late 2015 the ILRI Board was concerned that CGIAR-sourced funding for all current CRPs and their intended next phase had become even more precarious. It therefore charged Management to implement risk mitigation strategies that included sourcing greater alternative funding and increasing the efficiency of BecA operations.[165] Falvey became Board Chair (I declare an interest)

while Smith continued as Director-General; both were to participate in detailed reinvention of the CGIAR over the next five years.[166]

CGIAR's uncertain role and changes in corporate responsibility in major donor nations led the ILRI Board to further professionalize its membership. Consequently it recruited highly experienced international expertise for finance, investment and budgets, audit and risk, development practice, international business, advanced governance, and elite science governance and management. Becoming one of the leading Centre governance bodies, the ILRI Board constantly referenced itself against the ILRI Constitution and its mandate when challenged by inconsistencies from the Consortium Office or the Consortium Board. As part of further raising the profile of ILRI and livestock research, Nobel Laureate Peter Doherty agreed to become ILRI Patron; earlier in his career he had been a Board member of ILRAD. This assisted ILRI's efforts by facilitating access to decision-makers in funding bodies, and in correcting misinformation about livestock that was circulating in some donor nations.

By 2016 the CGIAR Strategy and Results Framework had such a broad vision[167] that it attracted little support. The continued failure of CGIAR to meet its budgeted commitments for CRPs had led those Centres with reserves to draw on them in order to properly meet their contractual obligations. Adopting a cautious approach in accessing reserves, ILRI also sourced other funds,

increased efficiencies and reduced some activities – and continued to argue against the unnecessarily high transaction costs of the CRP model.[168] By 2017 CGIAR-sourced funding (termed Windows 1 &2) for the ILRI-managed CRP had reduced to below 2009 levels in stark contrast to the Consortium's founding commitment of increased funding. The productive Livestock and Fish CRP that was designed to run for 12 years was prematurely terminated after five years. A successor CRP was later formulated in the overly political detail required by CGIAR and ILRI kept a cautious eye on ambitious funding promises. By now ILRI was sourcing 70-80 percent of the livestock budget directly. According to one informed reviewer, this CGIAR funding debacle marked the final fracturing of the foundational arrangements of independent donors, independent scientific advice and unrestricted core funding on which the initial success of CGIAR had depended.[169]

In seeking to remedy the System issues, Board Chairs and Directors-General of all Centres met in Europe or the US for multiple days twice or three times a year, sometimes with major key donor representatives present. With the Consortium disbanded during the process, a System Management Board (SMB) was created by the Centres to facilitate further developments, show inter-Centre cooperation and liaise with donors. In apparent culmination of the process in mid 2019, the Board Chairs and Directors-General arrived at a far-reaching proposal to cluster the 15 Centres into five groups that could gradually morph into five single Centres, and perhaps less. As part of this approach ILRI engaged consultants in revived talks with the World Fish Centre to explore means of enhancing both Centres' operations as a single entity. However, subsequent actions of the SMB and some donors were to again preclude action.[170]

Buoyed by their progress, which met the expressed concerns of donors, the combined Board Chairs and Directors-General explained their proposal as follows: "the current conformation of

15 independent centers [could move] as soon as practicable to a smaller number (~5) of boards, each governing one of the ~5 'clusters' of centers or merged centers. Indicative clusters would coalesce around such themes as: Agri-food systems, Animals, Natural Resources and Policy and an Agro-ecological Regional Cluster. There may be some common board members across clusters, particularly for common functions such as finance, audit and legal matters. Boards would meet the continuing legal obligations of centers and integrate current host country members. The chair of each cluster board would also be a member of the SMB, which may – but not necessarily – include an additional independent SMB member. Each of the ~5 clusters would be led by a CEO."[171] It was a bold advance that Centres were confident would be greeted with acclaim. It was also remarkably similar to an historical analysis of CGIAR that had earlier suggested returning to researchable issues related to public goods through four groupings of; field crops, root crops, animals and forestry.[172]

In the event, the Centres' proposal was gazumped by developments of which they were not aware, a circumstance that was revealed piecemeal to Centre Boards as a mechanism to move rapidly towards a single entity. Dubbed One CGIAR, the single entity promised more than doubling of funding in real terms in return for Centres' formally ceding overall governance to a single board. Centres were to become 'sites' matrix-managed to service large programs operating across many 'sites' according to new research priorities influenced to an hitherto unprecedented degree by political development agendas. The proposal was high-level and appeared impractical in many ways, which motivated the ILRI Board to provide advice in the spirit of making it more workable. ILRI Board and Management were particularly concerned that livestock research was not adequately acknowledged in the initial design. Informed by the history of unfulfilled promises of increased funding with the ILCA-ILRAD merger and again with the Consortium, the ILRI Board saw that it

could not commit to the emerging One CGIAR model unless livestock research was to be better funded.

In the meantime, the SMB was designated to be replaced by a One CGIAR Common Board (later renamed as the System Board). It now appeared that this had been envisioned by some players outside the Centres by effectively empowering the SMB to advance the model, and to disregard the 'cluster' contribution of the Centres. A System Board (SB) composed of persons mostly unconnected with the work of the Centres was to be formed with a governance mandate over all Centres, which would each sign an agreement to become part of One CGIAR. This was revealed in a structure that surprised the Centres when it was stated that "When formed – through the population by each Center/Alliance of at least a 2/3 majority of the Center/Alliance's own discretionary membership – the One CGIAR Common Board [that is, the SB] has an overall strategic responsibility (e.g. investments that have a broad whole-of-CGIAR potential impact, policies etc.) and appoints the One CGIAR Executive Team with clear Terms of Reference defining the roles and responsibilities of that empowered Executive Team."[173] With commitments from the SB that livestock research would increase in the new model, coupled with substantial direct funding previously negotiated by ILRI now seeming to be contingent on joining One CGIAR, the ILRI Board debated the best means by which it could serve its constitutionally-defined livestock mandate.[174] After successive deliberations, the ILRI Board determined to continue in its efforts to assist the SB and its agents to better understand the role of livestock research in CGIAR and the developing world.

The arguments put by the ILRI Board included the general points that; previous 'reforms' in CGIAR had failed to meet resourcing commitments, livestock research includes many species and disciplines that are much wider than crop research, and donors had preferentially increased their direct funding to ILRI. Specifically, the ILRI Board anticipated that One CGIAR would "redress the balance of investing in its agricultural research

portfolio such that the positioning and resourcing of livestock is commensurate with its value", which at the time was roughly 40 percent of the average global Agricultural Gross Product. The ILRI Board and Management were also particularly concerned with the neglect of host countries in the One CCIAR design and highlighted that ILRI was the only international livestock research Centre and maintained significant unique research facilities. As it was headquartered in two countries where livestock were essential for economies, livelihoods and other dimensions, the significant benefits – in the order of over US$16 million per year – contributed by host countries to ILRI and CGIAR was underrepresented in the new approach.[175]

The ILRI Board and its Executive Committee convened frequently to consider the implications of One CGIAR, especially those related to governance responsibilities, and agreed to proceed with the negotiations to join while withholding contractual commitment until it was satisfied that One CGIAR could meet the intent of the ILRI Constitution. Advisers to the SB proposed an initial One CGIAR structure for taking over the Centres based on examples from organisations quite unlike CGIAR that used a 'thread of governance' concept[176] in which governance was spread across various bodies in an organisation. They suggested that governance parties could include; the nominal governing body, management, owner stakeholders and other internal bodies – for which the governing body was accountable for a comprehensive governance framework that allowed all internal and external 'governance' groups to participate in decisions affecting the organisation.

The 'thread of governance' model would empower the SB to subsume the governance roles of Centre Boards as their roles withered to cover the minimum legal necessities that could not otherwise be handled by a distant SB. Management direction would be allocated to an Executive Management Team (EMT) reporting to the SB, which itself would have dominant numbers in the vestigial Centre Boards.[177] While this might superficially have

seemed a formalizing of the initial 'informal grouping' that was the CGIAR in its early inspired years, it was of real concern to Centre Boards that understood corporate obligations. But in the world of multinational organisations such obligations were less well defined. Nevertheless, Centre Boards saw that oversight and policy functions, especially those unique to research areas and host countries, could not be adequately covered by a single part-time board spanning tens of countries, jurisdictions, regulated facilities and research complexities. The proposed model was to be modified before it could be agreed by the ILRI Board, or others.

These deliberations were to come to a head through 2019. Meanwhile through 2018, the ILRI Board had continued deepening its corporate governance approaches, having already eschewed the CGIAR tradition of partial committees conducting core Board oversight functions of finance, audit and programs. Minutes and actions were formally agreed within days of Board meetings. A committee dealing with Human Resources had been disbanded so that only relevant policies and unresolved problems came before the Board while other matters were clearly defined as Management's role. In 2018, the ILRI Board encouraged an update of the Centre's strategy, supported investigation of means to integrate the Kapiti ranch under the ILRI international Centre agreement, and endorsed Management's proposal to form a contract-research business arm. Preparation for significant Bill and Melinda Gates Foundation (BMGF) funding revolving around genetic techniques was continuing and was expected to underpin a reorientation of the ILRI strategy and structure.[178]

By late 2018, the ILRI Board had endorsed a 30-year plan with three-yearly detailed operational plans that acknowledged the continuing challenges of uncertain funding and misinformation about livestock. These issues were allayed by the anticipated BMGF funding of $70 million, which was to include a forgivable loan.[179] At the same time, the Board was revising the ILRI Constitution and its operational Rules of Governance to ensure that they each properly reflected current relationships; thus

references to CGIAR that related to the now obsolete 'informal grouping' iteration were deleted and remaining references reflected the more contract-style relationship that arose in the Consortium era. As the implications of One CGIAR became clearer, the ILRI Board exceptionally extended the Chair's mandate a second time to the maximum allowable under the Constitution in order to help steer the transition.[180]

Through 2018-19, the ILRI Board developed a strategy for negotiations about joining One CGIAR, which included participating fully in all possible capacities in order to enhance the new organisation's potential effectiveness and include livestock research appropriately. As such, ILRI Board members variously contributed; as Chair of the selection panel for the intial SMB following the demise of the Consortium, as members to three Transitions Advisory Groups, as Chair of the selection panel for the new SB, and in planning of the general research strategy. The ILRI Board met frequently to deliberate means by which its responsbilities might be met within One CGIAR. Having satisfied itself that enhanced commitments for livestock research and associated budgets would be honoured, the ILRI Board agreed to again modify the ILRI Constitution to appoint members of the SB members as ILRI Board members alongside host country representatives and key 'discretionary' members continuing from the existing Board.[181]

In changing the Constitution, the existing ILRI Board insisted on provisions that aimed to ensure the inviolability of future changes affecting livestock. Specific clauses addressed a defined quorum and qualifications for voting on such matters as far-reaching decisions, amendments to the Constitution, and dissolution of the Centre. Then the "Board endorsed the proposed discretionary Board members as the current Board chair and the Program Committee chair, noting the assurance that the chair-elect would replace the current Board chair when his term ends in April 2021".[182] Subsequently it was agreed that non-voting members of the future ILRI Board would include the Director-General, the Vice

Chair and the chairs of the Finance and the Audit and Risk committees.[183] The ILRI Board voted unanimously for the revised ILRI Constitution at its meeting of the 23rd and 25th of September 2020.[184] One CGIAR was legally constituted on October 1st, 2020.

That September meeting was introduced by the Chair: "This is a momentous meeting of the ILRI Board. Despite having met a fortnight ago, we have scheduled this additional meeting in the final days before One CGIAR changes are implemented to ensure best preparation for the transition. The great goodwill expressed by the majority of the Board agreeing to step down in favour of members of the CGIAR System Board is matched by the professional manner in which the ILRI Board has fulfilled its governance responsibilities. However, even with this detailed planning and preparation, there are elements of the transition that are still unclear. The ILRI Board and Management are committed to One CGIAR, have separately allocated hundreds of person-days to the process – much of it voluntary or in addition to other ongoing responsibilities. I consider this an exemplary demonstration of commitment to and trust in One CGIAR. Our planning based on reciprocated trust in transparency, intended future operations, funding and directions of One CGIAR is therefore well integrated with the Board's consistent adherence to their responsibilities under the ILRI Constitution."[185]

The Chair of the System Council – the body of major donors paralleling the SB – summarised progress through 2020 in stating that "the global conversations of our time, in particular the increasing profile of the interlinked challenges of climate change, biodiversity loss and food security" defined the context for One CGIAR. The stated intent of the One CGIAR design to ensure that form followed function was to somehow be effected through leveraging "the strong brands and expertise of its Centers", by all System Council members (donors) supporting the research initiatives through pooled funding to meet new funding targets for 2022-2024, and through a new 2030 Research and Innovation Strategy.[186] The early iterations of that strategy had concerned

ILRI and spurred inputs by informed livestock researchers to correct naïve errors and integrate livestock into programs from which it had been omitted.[187]

Amidst the distractions of the intellectual and substantial time demands induced by preparations for One CGIAR, the ILRI Board continued its detailed oversight role of the Centre. This included Management's stewardship of the intended reorganisation of the Centre to meet the new challenges of livestock genetics related to breeding, nutrition and vaccines. In parallel with Management ensuring that ILRI's expertise and facilities addressed the threat posed by COVID-19, continuity of research was prioritized with the aim of returning the ILRI budget to the growth trajectory agreed prior to the interruptions caused by One CGIAR; the proposed budget had been in excess of $100 million by 2019 (up from $86 million in 2018) with further growth from an additional $70 million expected to be spread over the subsequent five years. Forestalled by the triple influences of One CGIAR, the pandemic and the withholding of the expected additional funding, growth had slowed, but by 2021 ILRI planned to resume activities to the level of the expected 2019 budget as indicated in Table 14.

Table 14. ILRI Budgeted Income and Expenditure, 2021[188]

Income	
CGIAR Research Projects (CRPs)	38.8
Direct funding to ILRI (bilateral and other)	57.2
Other forms of income	6.4
Operating Income	**102.4**
Expenses	
Research expenses	78.9
CGIAR collaborator expenses	13.5
Non-CGIAR collaborator expenses	8.7
Research deficit	0.3
Other expenses and losses	5.6
Operating Expenses	**101.9**
Net Surplus	**0.5**

The pre-October 2020 ILRI Board had reservations about the limited time available for the newly constituted Board to address the complexities of ILRI's diverse oversight needs across private ventures, commercial agreements, different host country agreements, hosting of other Centres, BecA, ownership of assets through a private company and a range of sites, species and disciplines from extensive rangelands through smallholders and food safety to vaccines and immunological research. To ensure continued good governance in the face of this concern, the ILRI Board created a transitionary Board Advisory Committee (BAC) comprising all members of the pre-October ILRI Board, which would underpin the new Board arrangements.

As ILRI entered 2021, its governance under the Constitution approved in September 2020 transitioned smoothly with eight new Board members from the SB. Research contracts continued, albeit modified to accommodate constraints related to the pandemic. However, the decades-long issue of shared governance had not been resolved by the changes brought by One CGIAR. ILRI's BAC might be seen as fudging that governance issue, and hence it was proposed to change it into a Livestock Research Advisory Committee to support the overlapping members of the SB and the ILRI Board. While this history ends at this time as ILRI enters into a consolidation and adaption phase with new challenges, it is apposite to note that the incoming Board Chair, Murano, has embraced the role with enthusiasm from April 2021.

Reorganizing CGIAR has repetitively led to "innumerable committees, study teams, ministerial consultations, task forces, change design and management teams, steering groups, independent reviews, transition management teams, and restructuring consultants [… that] pushed in the direction of becoming a centralized corporate structure with top-down management".[189] In making that observation, an informed commentary concluded that "CGIAR would be better off restructuring from the bottom up, rather than fiddling endlessly

with successive layers of management and governance superstructure – leaving the basic building blocks, the centers, unchanged”.[190] The current iteration is a giant step away from such advice, and is considered further in the following final chapter.

In this period, the theme of 46 years recurred in a new form that may yet clarify some elements of the governance responsibilities that have unproductively roamed between the ILRI Board, CGIAR in its various iterations, and sometimes ILRI Management. Having slowly grown into its role by picking up gaps left by changes in CGIAR, the ILRI Board had become a professional body acting as a corporate Board to greatly benefit ILRI by the second decade of the 2000's. Such developments were swamped by the assumptions of One CGIAR, which appeared to rely on remote oversight rather than corporate mores. In this model, the legal structures, obligations and unwritten agreements that allow the continuing legal entity of ILRI to operate in host countries, and to host other CGIAR Centres, requires informed governance that will continue to evolve.

Chapter 11

Whither ILRI & Governance?

ILRI's governance arrangements through five decades can be traced through the boxed summaries at the end of each chapter. Across that time ILRI's governance evolved from being strongly influenced by the 'informal association' of CGIAR to the ILRI Board assuming greater responsibility as ILRI grew to source the majority of its own funds. At the same time, the ILRI Board was subject to successive attempts to build a unified CGIAR System with increased overheads that potentially conflicted with ILRI's charter. Such Centre charters have underpinned the resilience of the CGIAR System, which led a recent analysis to conclude that one "option would be to give up the struggle to build a System, dismantle all current System structures, and let the existing centers operate in the market. The best centers would likely survive and even flourish … ".[191] That remains a valid option but one that will not yet be tested since the current reorganisation is still in its infancy. With benefit of five decades' experience, the reorganisation has distinct advantages over its predecessors if it learns from those lessons. One lesson is that international agricultural research benefits from flexible and skilled management with a high degree of autonomy close to researchers that is overseen and protected from unproductive whims by experienced governance of the research institution. This chapter elaborates some points relevant to such governance from ILRI's history.

In the 1970s, the CGIAR and the ILRI Board seamlessly cooperated as funds flowed reliably. This happy situation masked the role of governance, as did the early CGIAR focus on the narrowly-defined high rates of return from crop research[192] and some rainfed systems in Africa;[193] at the same time, the social sciences[194] failed to demonstrate similar impacts. In this milieu the ILRAD

laboratory and the ILCA agro-ecological approach were anomalies with the consequence that livestock research was both underappreciated and underfunded compared to the crop Centres, as contemporaneous analysis of World Bank programs also revealed.[195] The later merger of ILRAD and ILCA potentially exacerbated the marginalization of billions of livestock-dependent people[196] when promised CGIAR funds failed to arrive. After such funding failures recurring with the Consortium, the ILRI Board adopted the rigours of corporate governance.

ILRI's governance principles matured as it approved the vision, purpose and strategies of ILRI. Board members and Management set the Centre's cultural tone while the Board exercised independent judgment in overseeing Management. As the most widely adopted approach in the sphere of governance[197] these general principles had developed across millennia to curb behavioural excesses and biases, and to integrate diverse experience in an organisation that identifies as a legal person. Some even see this corporate means of working together productively as an organic expression of the natural philosophy reinvigorated by the Enlightenment.[198] Others see that it productively integrates animal behavioural science with inherent human traits. Yet others consider research and development oversight as an art form[199] that must navigate changeable multinational agendas and cultural expectations.[200] Whatever the case, governance of ILRI must acknowledge that while it may be a large Centre in the CGIAR System, it and even the combined CGIAR Centres, is tiny compared to other international organisations. For CGIAR and Centres, size precludes mimicking the costly multiple committee-like governance arrangements of the large organisations. Yet as the OECD notes the need for clear authority, accountability and responsibility exists for all organisations.

OECD guidelines, as for most professional bodies, states that corporate governance includes shareholder rights, the role of stakeholders, transparency, and board responsibilities that include strategic guidance, monitoring of management and

accountability on behalf of the organisation.[201] This might be read as being oriented to commercial entities but in fact has wider applicability since the guidelines were developed in co-operation with the World Bank in pursuit of global uniformity. If it is argued that Centres like ILRI should operate in a public-sector governance and management mode, it must be acknowledged that public-sector boards are usually advisory and conform to policies set by other parts of government. Perhaps this is why governance in the public sector is generally less-well understood than that in the corporate sector.[202]

The board of an organisation serves both the organisation's purpose and shareholders. When conflict arises between the two, such as shareholders' short-term aims being inconsistent with a long-term mandated purpose of the organisation, the board must provide wise balance. In the context of ILRI, donors might be seen as quasi-shareholders whose political agenda could, for example, compromise the long-term research that meets ILRI's mandated purpose. Board members in such a situation are bound by ILRI's Constitution. In reality, while donors are not shareholders with constitutional power to replace Board members, they can withhold funding. Good governance therefore requires a balance that is achieved by direct and open dialogue with donors; in this situation an intervening body with other objectives can lead to Boards trying to serve two masters, which vitiates goodwill and communication.[203,204] Yet the System once worked.

The international agricultural research system was conceived in a less selfish era and was designed around the genius of precluding administrative and political interference in the science of the independent legal entities, the Centres. A leading figure in CGIAR went on to note: "that genius has always run afoul of management experts … imbued with a top down corporate model with one Board, one Chair, one CEO and corporate divisions reporting to headquarters."[205] This begs the question of likening donors to shareholders and may explain ambiguous interpretations of the rhetorically label of 'stakeholder'. Actual stakeholders would

logically include research beneficiaries, expert researchers – and host countries, the forgotten donors. Attempting to integrate multiple players in governance is similar to the 'thread of governance' approach mentioned in the previous chapter. Such a stakeholder approach would also imply that the rights and interests of each party be enshrined in the Centre Constitution. This has never been the case, but then neither was the shared governance that arose from ILCA and ILRAD's outset in which CGIAR assumed aspects of such governance functions as oversight, planning and budgeting. Viability and acceptance of that extra-Constitutional arrangement rested on control over secure donor funding through CGIAR; the power dissipated when funding-security ended.

To condense this history in CGIAR terms: In the 1970s inception of the CGIAR and the modalities of TAC and International Centres Week (ICW) functioning as a sort of AGM, donors acted as hands-off 'shareholders' who made whole the proposed budget. As the CGIAR extended its representation and participation at ICW beyond those who funded the system, the donor's posture gradually shifted from being shareholders to that of 'stakeholders'. The implication over time from a governance standpoint was that the donor organ – the Executive Council then later the System Council – oscillated between acting as shareholders and stakeholders as they exerted their major decision-making powers without contracted obligations. Governance conventions from the early years when TAC was the dominant body had built up a trust across Centre Boards and donors alike. By the 2000s donors' need for increased accountability logically engaged them directly with Centres at the same time that major donors became enamoured with larger research programs. In so doing donors entered the governance mix of Centres while outwardly eschewing responsibility. Centres responded professionally by organising themselves into an Alliance to facilitate coordination of research programs without large increases in overheads. Before the Alliance had time to prove itself, the Consortium was proposed and later implemented,

and the role of donors in governance increased as the Executive Council came to act in parallel with the Consortium Board. As centralizing momentum rolled into the mid 2010s, donors' influence in governance became even clearer with formation of the System Council, which was asked to endorse major proposals presented to the System Board. Insofar as such power and influence form a critical component of governance, the absence of accompanying responsibility, including for the needs of research, highlighted a lesson to avoid in reformations of 'the System'.

Within the context of that summarized history of CGIAR, the experience of ILRI of successive failures of promised funding that resulted at merger and centralizing attempts led the ILRI Board to become different from most other Centre Boards. It certainly was much different from what was imagined within CGIAR itself. The ILRI Board's expectation to continue in its corporate mode and to oversee major restructuring and further developments from 2019 were forestalled by a further attempt to reorganise the System. In committing to the reorganisation, ILRI remained unclear as to whether the 'thread of governance' approach was being followed as claimed, or whether it was something closer to the Harvard Business Roundtable of CEOs' shareholder engagement with "a corresponding increase in shareholder responsibility"[206] It might also have been seen as a continuation of an administrative mindset that ignored the need for governance as if legally constituted Centres did not exist. It is unsurprising that the ILRI Board remained wary – and that the global livestock research fraternity expressed concern. Other wider questions also rose from the ashes of development assistance debates, and can here be quickly dismissed.

Development assistance had long been seen by parts of academia as a neo-liberal rationale[207] that followed either a market-based approach or a general interest approach.[208] The general interest approach privileged some stakeholders over others and at worst was criticized as hegemonic expansionism akin to colonialism. Such a viewpoint saw improvement of nutritional wellbeing, for

example, as enhancing economic growth rather than as a good in itself, which led such commentators to argue that this was done to 'simulate egalitarianism' in order to make the status quo politically acceptable.[209] Their implied solutions were as flawed as their idealistic views that donors can be agnostic about the purposes to which their funds are applied. Most of these arguments can be dismissed as outdated when it is recalled that foreign policy links aid to national security and trade, and national cultural lobbies can influence aid allocations. Yes, it is self-interest and donors are concerned about where, how and to what effect their funds are applied, and aid has always been about 'doing well by doing good'.[210] Given that donors have been reticent to take direct governance responsibility on Centre Boards, past responsible stewardship by the implementing Centre maintaining close dialogue with donors has been critical for major impact and accountability. Successive reviews of ILRI's performance indicated its successful impact in juggling changing governance tensions while improving the wellbeing of hundreds of millions who have benefitted from the products of livestock research.[211]

With high levels of impact,[212] functioning Centre governing bodies[213] and recognition that restrictions of centralized funding distorts priorities and raises transactions costs,[214] an argument might easily be put that resolution of funding should be the focus. If funding cannot be assured, organisational change would be oriented to reducing overheads while maintaining impact. Yet past reactions to this scenario have not followed this logic, preferring structural changes that increased overheads.[215] Perhaps governance has been viewed as an instrument of administration rather than the other way around as part of an administrative air du temps that has also afflicted leading independent universities.[216] Projecting problems that have arisen from centralizing forces and administration onto the Centres has recalled Bertolt Brecht's satire of East German leaders who claimed "that the people had failed the government and had to work hard to regain its trust. Would it not then be simpler …if the government dissolved the people and chose another?"[217]

Dissolving the Centres into 'research sites' has indeed been mooted in some centralizing attempts as a means of facilitating administration, as if the autonomous Centres were divisions of a government department.

Government organisations of superficial relevance in such governance discussions have included the national research systems of smaller donor nations, such as parts of Australia's national research body – CSIRO, that are of similar size to the combined CGIAR Centres. In consolidating separate research divisions into a single body, CSIRO governance was vested in a single Board.[218] Even with only one shareholder and stakeholder, surety of funding, and long-term employment for career researchers – all factors foreign to CGIAR – potential benefits have been compromised by demotivation of researchers and increased administrative burdens. Likewise, a New Zealand Crown Research Institute about the size of ILRI differs insofar as the NZ institutes were constituted under commercial law with attendant penalties for directors.[219] Vibrant responses to emergencies for such domestic organisations relies on a convergence of objectives with the single political 'owner'. By contrast, such responses are problematic and slow in the international sphere.

A vibrant research body requires the ability to respond to unforeseen events governed by expertise that is beyond administrative functions and is aware of the foibles of human nature. The mixed ILRI-CGIAR governance model of the 1970s was possible, not only because funding was assured through CGIAR, but because of the goodwill of the personalities involved. Sharing a common worldview of applying science to address suffering, and in particular hunger, was a shared vocation. It may no longer be possible to rely on such commitment, as demonstrated in the 2010s when Chinese whispers were spawned by the CGIAR Consortium-mediated communication between donors and researchers. How does this sit with a recent description of an idealized "governance and management structure [that] distributes strategic direction, governing and

advisory functions among several entities, reflecting the diversity of stakeholders within the CGIAR System and the critical importance of ensuring that the voices of our partners inform our actions and decisions"?[220] Clearly, such an intention is laudable, but it ignores the System's Achilles heel of unreliable research funding.

Recovery from periodical funding shortfalls has been a hallmark of Centre success. Centre Boards and Management have long known that "resources for agricultural science are scarce. Worldwide, public agricultural research systems are being asked to do more with less. … Agricultural science is being asked to contribute to knowledge and technology and to satisfy demands for information on many new issues – environmental problems, food safety and quality, and rural development – without forsaking traditional work."[221]

More specifically for international agricultural research, a current independent study of all Centres' conservatively indicated overall returns on investment of 10 to 1. That study concluded that "over the past five decades the CGIAR has spent about $60 billion [that] has returned tenfold benefits … manifest as less-easily measured payoffs for poor people from greater food abundance, cheaper food, reduced rates of hunger and poverty, and a smaller geographical footprint of agriculture. This does not count substantial benefits accruing in high-income countries."[222]

High rates of return under conditions of unsecure funding has relied on direct communication between Centres and donors, which recalls a founding principle of the Rockefeller Foundation in creating the first Centres in the 1960s.[223] The Foundation sought to "deliberately design a system to attract aid funding but not give aid bureaucrats and politicians centralized power to set scientific priorities and manage long-term research organizations."[224] The lesson appears to be, in the language of one of an informed participant, that Centres are central to any

reorganisation if the System is to avoid being 'reformed into dysfunctionality'.[225]

Today, there is reason for hope that today past lessons can be heeded, that Centres can remain identified as the centre of the System, and that critics in the wider research community can be mollified. Those criticisms include; beneficiaries concern about the reorientation serving donor political ends; a perception that CGIAR is downgrading researchers and research CEOs, and frustrations among the vast support network of leading scientists and those experienced in research governance who question whether CGIAR remains a moral cause worthy of their commitment. As the reorganisation evolves, such matters can be addressed by heeding lessons from past glitches where reorganizational ambition exceeded the practicalities of maintaining efficiencies in research that serves marginalized peoples.

What does this mean for the post-2020 iteration of CGIAR and ILRI? In addition to the uncertainties of the current times, history suggests that a centralized model promising huge increases in funding is risky. Perhaps times will change, perhaps values will change. But some things may best remain the same – in this case it may not be wise to downgrade well-governed agents that have saved the System in the past – the large independently governed legal entities, Centres like ILRI. Just as the agricultural sector in the developing world periodically acts as the shock-absorber for global financial corrections, so it may be said that the agricultural research Centres have acted as shock-absorbers for periodic financial glitches in CGIAR – and both the agricultural sector and the Centres have also been major forces in the subsequent recoveries.

Appendix

A Global Context of International Agricultural Research & Development

With its teleological ideology based on markets, mobility and mutability, the post-World War II US assumed all Western societies would work together. While the US approach was the antithesis of Soviet socialism, both capitalist and socialist ideologies saw the past and its traditions as a vestige to be swept aside – one pursuing its objective via markets and the other via central planning. The result was the Cold War, which began with the US eschewing the rules of the colonial period established primarily by Britain and confirming itself as the major global power. In that capacity, it can be seen as stimulating reactions such as the consensus approach developed in the European Union, and perhaps even the rise of the Chinese Communist Party.[226] From the US perspective access to foreign markets and trade required global economic stability, which it sought via the 1944 Bretton Woods' agreements to create the International Monetary Fund (IMF), the International Bank for Reconstruction and Development (World Bank) and by tying traded currency values to the US dollar. As the largest provider of development funds, complemented by the Ford, Rockefeller and other US foundations and investments via the CIA, the US influenced strategic global allocations that ranged from European universities and research institutions to cultural organisations that countered communism.

In the same era, developments especially in China were supported by a huge Soviet assistance program that represented around one percent of Soviet GDP; the US Marshall Plan (see below) was around 0.6 percent of US GDP.[4] Countering Soviet influence in the 1960s, the US Peace Corps was created to send 15,000 Americans

abroad to share "in the great common task of bringing to man that decent way of life which is the foundation of freedom and a condition of peace."[227] With the global economy slowing and the US model reliant on expansion of capital, dialogue increased and by 1975 produced the Soviet-initiated Helsinki Agreement for a Declaration on Principles Guiding Relations between Participating States. The Agreement implied stability through principles of national sovereignty of borders and domestic matters and in some cases, Western provisions for universal human rights and fundamental freedoms.[228] As East-West conflicts seemed to ease, a European proposal to avoid similar North-South conflicts led to the New International Economic Order Bill being passed by the UN General Assembly. The US dissented, seeing it as a form of socialism that would stifle the world economic order and as a result that EU ideal achieved little more than the Lomé Conventions' duty-free imports to the EEC for favoured nations. The bland assumption of the Bill that developing nations were somehow uniform in assets, development and attitudes was made false by the differing reactions from nations with diverse economic bases – the needs of those supplying raw materials to Western nations differed from those of city states or oil exporters.

The Cold War morphed to a new form when the US 1980s recession was addressed through large military spending and global investments that led to Asia becoming an industrial supplier to the West. Ideological differences also reduced as Russia modified its economy, and as new fields of conflict arose in ethnic, religious and national terms. Nevertheless, such globalization transformed the views of many influenced by socialist policies, including China, and ushered in an era of marketing, management and at least some financial relaxation, all of which incidentally further benefited the US.

Embedded in the post-war worldview of equity, the international agricultural research Centres followed an emphasis on technical solutions to development. While their focus has always been on

research in the service of development as conceived by wealthy nations, emphases have been influenced by political fashions in funding nations, development agencies and even philanthropic bodies. Thus the impact of applied research is today considered in such terms as environment, gender and national good governance as defined by funders. Nevertheless, it has been argued that the founding assumptions of international organisations have remained unquestioned insofar as technical assistance is considered the lever for development that will facilitate improved policy making. Thus from the 1980s, when wider issues such as sustainable development, national good governance, and participatory development, gender, and indigenous peoples became de rigueur, each was still unconsciously conceived within a technological worldview.[229] This applied to all international development, including livestock research.

International livestock development predates conception of the international livestock research Centres of the post-war era. While acknowledging the significant earlier colonial developments, the founding definitions of post-war development were essentially those of the USA. Narrowing the historical line for the sake of brevity in this discussion: the US conception has been traced from 1949 when Truman in his inaugural presidential address defined development for poor nations in terms of mimicking the route followed to wealth by Western nations. Since then, notwithstanding the distractions of Keynesian versus neoliberal debates, the approach has remained that of making parts of Third World nations in the Western image. The major themes of development transitioned through infrastructure, industrialization, macroeconomic reform and electoral democracy in the pursuit of replicating Western values and wealth, which became a convenient means of rebutting the expansion of communism. Early World Bank loans for economic reconstruction in Czechoslovakia, Denmark, France, Luxemburg, The Netherlands and Poland had shown benefits from this general approach.[230]

After US Secretary of State Marshall initiated his eponymous Plan, the World Bank came to focus on less developed countries. Demand for development assistance loans rose as colonies became independent and sought Marshall Plan funding similar to that extended to Europe. Through the evolving UN system emerging nations argued for concessional lending and grants for technical and financial assistance. Opposed by most Western nations this eventually led to the creation of the soft-loan window of the International Development Association of the World Bank funded by Western nations, but mainly by the US. The resulting technical advice, dams, canals and roads averted much hunger and poverty as bilateral development assistance grew in parallel with Bank loans. The shared aim was to increase national incomes by five percent by 1970 through infrastructural, agricultural and industrial development, which was expected to double living standards within 30 years.[231]

This 'golden age of technical assistance' was exemplified by the UN declaration of the 1960s as the decade of development. It was the period when the US philanthropic foundations – Rockefeller and Ford – began strategic inputs for research to adapt Western innovations and practices in support of Third World agricultural development. This led to, among other innovations, the idea of adding livestock health and production research to the development formula. All such interventions subscribed to faith in repeating the unprecedented rate of economic growth in the West since 1940 including those European nations that had been devastated by the war. That faith was borne out by the growth in Asia, Latin America and even to an extent in Africa – until the mid 1970s. Then followed an oil crisis, inflation and recession, which led to the GDP of Western nations falling and aid flows faltering at the same time that the elevated expectations of poorer nations found voice in international development dialogue. Part of that expectation was addressed to the poorer sections of the population in developing countries.

The World Bank Research department concluded in 1974 that "more than a decade of rapid growth in under-developed countries has been of little or no benefit to perhaps a third of their population".[232] Sceptical developing country leaders challenged the intent of technical assistance while wealthy nations began to experience what later became known as 'donor fatigue'. A product of internationalization itself, developing-nation spokespersons now argued that development assistance was a means of reinforcing the existing world order, which was underpinned by the international financial system. Observing these trends, informed parties worried that global stability could be put at risk by divergent viewpoints, uneven development and rising population.

Concern about the future gained currency with the influential Club of Rome publication, 'Limits to Growth',[233] which spawned other works and motivated a generation of agricultural scientists to enter international development. Revised approaches by major institutions sought to accommodate the demands of poorer nations. One minor part of these changes was the 1970s formation of a voluntary group of donor nations called the CGIAR, through which the World Bank and donor nations allocated funds for agricultural research specific to the needs of developing nations. International agricultural research Centres already in existence or under preparation formed the core of the CGIAR, including the two livestock research Centres.

The 1970s also saw national planning and industrialisation reoriented to markets and macroeconomics through structural adjustment loans. Seemingly unimportant to international agricultural research, this change led to US concerns about conflicts with its own interests, which culminated in its first formal vote against a World Bank loan. Soon afterwards the US became the first major donor country to the Bank to reduce its expected increase in contributions, and to link future contributions to specific policy changes in borrowing nations. The tactic was to be repeated by the US and sometimes adopted by

other agencies. On a comparatively microscopic scale the donor base of the CGIAR also drifted towards directing funds to specific agricultural research through bilateral grants to research Centres in preference to 'core' funding channelled through the CGIAR. For a small group of independent Centres, this seemed a logical decision although it had the effect of marginalising the scientific coordination and oversight of integrated research programs, and the collegiate governance influence that came with those roles.

International development gradually became seen to be a much more long-term process than post-war reconstruction had been in nations with an educated populace and similar cultural values to the US. It was therefore postulated that foreign assistance could only expect to influence rather than lead development, which was said to require the involvement of the private sector.

By the 1980s, World Bank structural adjustment loans enforced policy changes that included promotion of the private sector in conjunction with improvements in national governance. In the supporting role performed by international agricultural research, technological innovations were to be accompanied by policy advice aimed at enhanced adoption of research products. Poverty alleviation emerged to eventually divert attention from food and nutritional security and from the livestock-human health issues serviced by the two international livestock research Centres. By the 1990s the focus widened further to address environmental and social policies and orient governments to create enabling atmospheres for private sector development. As the majority of the poor-world's livestock keepers and farmers were smallholders who were the focus of the international agricultural research Centres, development dialogue became confused, and new voices arose from the NGO and academic sectors.

Diverse commentary included reference to failures to instil good governance or to counter endemic corruption, which both resulted from excessive reliance on technical and economic issues. Academic and NGO rhetoric claimed that such a

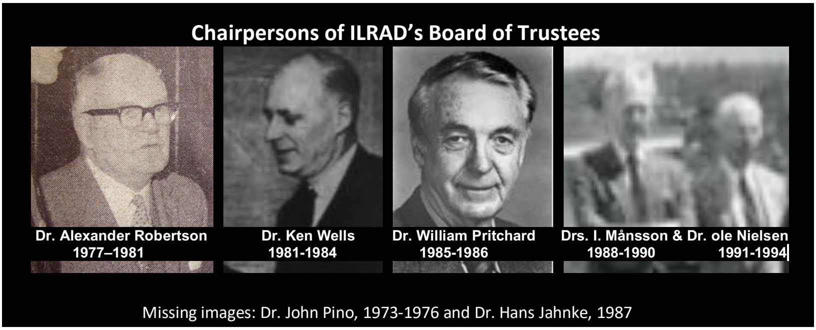
functionalist approach privileged technical above political solutions by assuming that all problems could be reduced to the same rational analysis as technical matters.[234] Donors and funders influenced by such opinion became increasingly concerned to ensure that projects demonstrated impact. For specialized agricultural research this led to the impossible situation of short-term social impact being expected from long-term technological research. Continuity of long-term research commitments with extended implementation chains, such as development of vaccines and rangeland management, became complex as donor time horizons shrank.

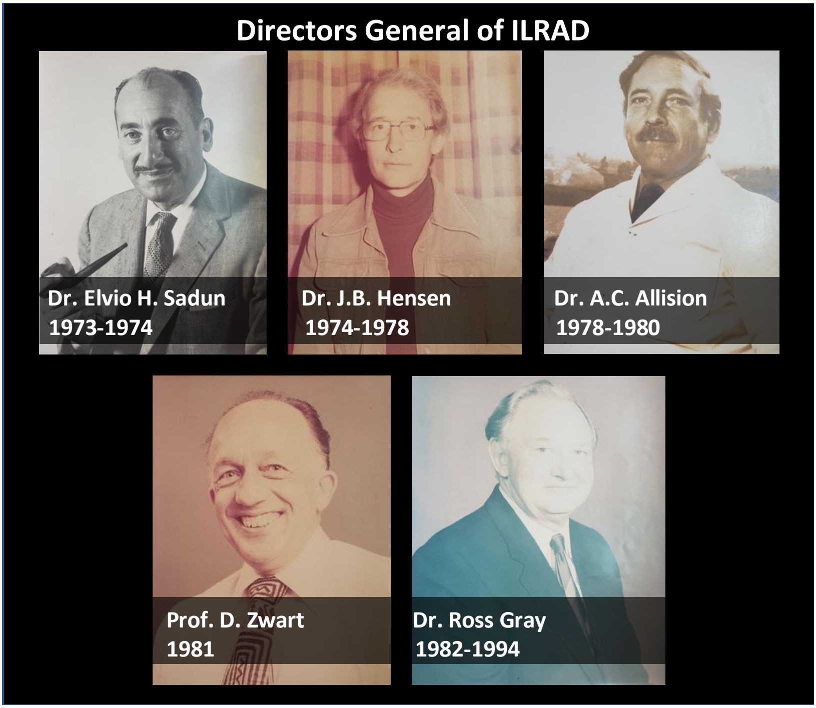
By 2010 there were 15 international agricultural research Centres, the two livestock Centres had merged in 1994. As small multilateral institutions the Centres had produced exceptional benefits with credible rates of return, higher than any donor expected.[235] This had been accomplished by astute management and variable governance structures within the CGIAR. Boards of the autonomous Centres served an essential role in protecting elite researchers from many of the whims and vagaries of development fashion so that long-term programs could support balanced development. However, Centre Boards effectively shared their governance roles with other parties including occasional donor representatives and the Technical Advisory Committee and other iterations of the CGIAR. Over time as Centres increasingly operated as integral units and sourced much of their own funding, some Centre Boards assumed more conventional governance approaches. But such small organisations were inevitably affected by the changing international relationships that in turn impacted the operation of multilateral institutions.

Bøås and McNeill discussed the future of multilateral institutions in general and although their focus was on large institutions such as the World Bank, they introduced the trends that define all international development.[236] Even for large institutions, civil society seems to assume that past approaches and current politics can be brought together to make globalisation work for the poor.

It is a recognition that the USA remain critical to international development and that this implies participation of the private sector – and philanthropic organisations. If these forces persist and if they apply to the international agricultural research Centres, then it marginalises much academic debate about Keynesian versus neoliberal views of development. Pragmatically, the USA remain the dominant global state supported by its huge economy, military capacity, multicultural population and the English language. It is also the home of large philanthropic groups and legislation that encourages disbursement of those funds. It therefore seems that the future direction of funding for international agricultural research will probably be determined more by the USA and like-minded wealthy nations than by academic or avant-garde correctness. If this is correct, many hope that this might lead to a return to a central focus on research to reliably alleviate food and nutritional insecurity as the first step toward full human development. As livestock research remains central to such a goal, a rational future would see expansion of the work of ILRI and its collaborators. The imperatives that caused ILCA and ILRI to be established when the world population was approaching four billion are even more important today.

Board Chairs and Directors-General
ILRAD
ILCA
ILRI


Chairpersons of ILRAD's Board of Trustees
Dr. Alexander Robertson
1977–1981
Dr. Ken Wells
1981-1984
Dr. William Pritchard
1985-1986
Drs. I. Månsson & Dr. ole Nielsen
1988-1990 1991-1994
Missing images: Dr. John Pino, 1973-1976 and Dr. Hans Jahnke, 1987


Directors General of ILRAD
Dr. Elvio H. Sadun
1973-1974
Dr. J.B. Hensen
1974-1978
Dr. A.C. Allision
1978-1980
Prof. D. Zwart
1981
Dr. Ross Gray
1982-1994


Chairpersons of ILCA's Board of Trustees
Dr. Richard Hodgson
1974-1979
USA
Dr. Moise Mensah
1979-1980
Benin
Prof. R. McDowell
1981-1985
USA
Dr. Barry Nestel
1985-1987
UK
Dr. Ralph W. Cummings
1987-1991
USA
Prof. Dieter Bommer
1991-1994
Germany


Directors General of ILCA
Dr. J. Pagot
1974-1976
France
Dr. David J. Pratt
1977-1981
UK
Dr. P.J. Brumby
1981-1986
New Zealand
Dr. John Walsh
1986 – 1993
Ireland
Dr. Hank Fitzhugh
1993-1994
USA


Chairpersons of ILRI's Board of Trustees
Dr. Neville Clarke
1995-1999
Dr. John Vercoe
2000-2004
Dr. Uwe Werblow
2004-2009
Dr. Kurt Hove
2009-2012
Dr. Lindiwe Majele Sibanda
2012 to 2015
Prof. John Lindsay Falvey
2015 to date


Directors General of ILRI
Dr. Hank Fitzhugh
1995-2001
USA
Dr. Carlos Sere
2002 – 2011
Uruguay
Dr. Jimmy Smith
2011 to date
Canada

Endnotes & References

[1] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.
[2] https://www.carvergovernance.com/pg-np.htm
[3] Maureen Robinson (2000) Non-profit Boards That Work: The End of One-Size-Fits-All Governance. Wiley, Pp162.
[4] ILRI (2020) The Impact of the International Livestock Research Institute. Edited by John McIntire and Delia Grace. Nairobi, Kenya: ILRI, and Wallingford, UK: CABI.
[5] Updated from figures of McIntyre, J. and Smith, J. (2020) The Evolution of IARC Livestock Research, 1975–2018. In: 'The Impact of the International Livestock Research Institute'. 2020. Edited by John McIntire and Delia Grace. Nairobi, Kenya: ILRI, and Wallingford, UK: CABI.
[6] Herrero, M., Havlík, P., Valin, H., Notenbaert, A., Rufino, M.C., Thornton, P.K., Blümmel, M., Weiss, F., Grace, D. and Obersteiner, M. (2013) Biomass use, production, feed efficiencies, and greenhouse gas emissions from global livestock systems. PNAS 110: 20888-20893. doi: 10.1073/pnas.1308149110.
[7] Anne Mottet et al. (2017) Livestock: On our plates or eating at our table? A new analysis of the feed/food debate. https://www.sciencedirect.com/science/article/abs/pii/S2211912416300013
[8] P. Starkey 2010. Livestock for traction: world trends, key issues and policy implications. AGA working paper series. Rome, FAO.
[9] Falvey, L. (2013) Beliefs that Bias Food & Agriculture: Questions I'm Often Asked. Institute for International Development. Pp 328.
[10] John McIntire and Delia Grace (2020) The Impact of the International Livestock Research Institute Nairobi, Kenya: ILRI, and Wallingford, UK: CABI.
[11] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.
[12] Historical Perspectives on the Consultative Group on International Agricultural Research (CGIAR), March 15-15, 2021, University of Cambridge. Call for workshop and edited volume
[13] Derek Byerlee and John K. Lynam (2020) The Invention of the International Agricultural Research Center Model and the CGIAR System. Feb 26, 2020. https://www.researchgate.net/publication/343442926_The_Invention_of_the_International_Agricultural_Research_Center_Model_and_the_CGIAR_System
[14] http://www.fao.org/3/p4228e/P4228E03.htm
[15] Staples, A.L. (2000). Norris E. Dodd and the connections between domestic and international 74(2), 393-403. Global food security, 20
[16] Derek Byerlee and John K. Lynam (2020) The Invention of the International Agricultural Research Center Model and the CGIAR System. Feb 26, 2020. https://www.researchgate.net/publication/343442926_The_Invention_of_the_International_Agricultural_Research_Center_Model_and_the_CGIAR_System
[17] Pritchard, W., Robertson, A. and Sachs, R. (1972) Proposal for an International Laboratory for Research on Animal Diseases. Report Commissioned by the Rockefeller Foundation and Consultative Group on International Agricultural Research.
[18] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G.

Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.

[19] Derek Byerlee and John K. Lynam (2020) The Invention of the International Agricultural Research Center Model and the CGIAR System. Feb 26, 2020. https://www.researchgate.net/publication/343442926_The_Invention_of_the_International_Agricultural_Research_Center_Model_and_the_CGIAR_System

[20] Byerlee, D. and Lynam, J. (2020) The development of the international center model for agricultural research: A prehistory of the CGIAR. World Development 135: 105080

[21] Hodge, J. M. (2007). Triumph of the expert: Agrarian doctrines of development and the legacies of British colonialism. Athens, Ohio: Ohio University Press.

[22] President's Science Advisory Committee (1967) The World Food Problem. Report of the Panel on the World Food Supply. The White House, Washington, DC. Quoted in: McIntyre, J. and Smith, J. (2020) The Evolution of IARC Livestock Research, 1975–2018. In: 'The Impact of the International Livestock Research Institute'. 2020. Edited by John McIntire and Delia Grace. Nairobi, Kenya: ILRI, and Wallingford, UK: CABI.

[23] Beck, G.H. (1971) An International African Livestock Center: Task Force Report. Rockefeller Foundation, New York.

[24] Baum, W. C., with Lejuene, M. L. (1986) . Partners against hunger: The Consultative Group on International Agricultural Research. Washington, DC: The World Bank.

[25] Pino, J.A. (1970) Discussion paper on livestock production in tropical Africa. In: Bellagio IV Conference, 3–4 December, New York.

[26] Gray, A.R. (1984) Activities of the International Laboratory for Research on Animal Diseases. Preventive Veterinary Medicine 2, 13–21.

[27] Anderson, R.S., Levy, E. and Morrison, B. (1991) Rice Science and Development Politics: Research Strategies and IRRI's Technologies Meet Asian Diversity. Oxford University Press, Oxford.

[28] McIntyre, J. and Smith, J. (2020) The Evolution of IARC Livestock Research, 1975–2018. In: 'The Impact of the International Livestock Research Institute'. 2020. Edited by John McIntire and Delia Grace. Nairobi, Kenya: ILRI, and Wallingford, UK: CABI.

[29] An International Laboratory for Animal Disease Research in Africa. J. McKelvey and J.A. Pino, November 1970.

[30] Quote in: McIntyre, J. and Smith, J. (2020) The Evolution of IARC Livestock Research, 1975–2018. In: 'The Impact of the International Livestock Research Institute'. 2020. Edited by John McIntire and Delia Grace. Nairobi, Kenya: ILRI, and Wallingford, UK: CABI.

[31] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.

[32] Falvey, L. (2012). Derek Tribe: International Agricultural Scientist, Canberra: The Crawford Fund for International Agricultural Research.

[33] Tribe, D., Nestel, B., Pratt, D. J. & Thome, M. (1972). Animal production and research in tropical Africa. Rome: TAC. http://pubdocs.worldbank.org/en/942771399321197185/wbg-archives-1654748.pdf.

[34] Tribe, D., Nestel, B., Pratt, D.J. and Thomé, M. (1973) Animal production and research in tropical Africa: report of the Task Force commissioned by the African Livestock Sub-Committee of the Consultative Group on International Agricultural Research. Report submitted by Task Force Team Leader, Professor D.E. Tribe. CGIAR. Washington, DC.

[35] Derek Byerlee and John K. Lynam (2020) The Invention of the International Agricultural Research Center Model and the CGIAR System. Feb 26, 2020. https://www.researchgate.net/publication/343442926_The_Invention_of_the_International_Agricultural_Research_Center_Model_and_the_CGIAR_System

[36] Paddock, W. and Paddock, P. (1967) Famine 1975! America's Decision: Who Will Survive? Little, Brown and Co.

[37] Bonner,J. (1967) Science 157 (3791): 914–15.

[38] Ehrlich, P. (1968) The Population Bomb. Sierra Club.
[39] Ehrlich, P. (1974) The End of Affluence: A Blueprint for Your Future. Ballantine.
[40] Agreement Between the Government of the Republic of Kenya and International Laboratory for Research on Animal Diseases (ILRAD) for the Regulation of the Headquarters of ILRAD, 2nd April, 1993.
[41] Host Country Agreement Between the Transitional Government of Ethiopia and The International Livestock Research Institute, 8 July, 1995
[42] Memorandum of Agreement Between The Empire of Ethiopia and the International Bank of Reconstruction and Development on behalf of the Consultative Group for International Agricultural Research for the Establishment of an International Livestock Centre for Africa (ILCA). 16 July, 1974.
[43] Report of the Third External Programme and Management Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat. Food and Agriculture Organization of The United Nations. January 1993.
[44] An International Laboratory for Animal Diseases Research in Africa. J. McKelvey, Jr. and J.A. Pino, November 1970.
[45] Quoted in, Report of the TAC Quinquennial Review Mission to the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. March 1982
[46] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[47] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[48] Architect's Impression of the ILRAD campus as depicted in 'A Special Report on ILRAD' in the Kenyan Newspaper, The Standard, Wednesday April 5, 1978.
[49] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[50] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[51] Adapted from: Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[52] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[53] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[54] Report of the TAC Quinquennial Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, FAO, 1981.
[55] Lindsay Falvey (2012) Derek Tribe – International Agricultural Scientist: Founder of The Crawford Fund. The Crawford Fund. Pp 252.
[56] Report of the TAC Quinquennial Review Mission to the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. March 1982
[57] Quoted in, Report of the TAC Quinquennial Review Mission to the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. March 1982
[58] ILCA Memorandum of Agreement. Signed between ILCA and the Government of Ethiopia, 1974.
[59] https://adb.anu.edu.au/biography/crawford-sir-john-grenfell-jack-1391
[60] J.G. Crawford (1982) Panel Chair covering letter for the Report of the TAC Quinquennial Review Mission to the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. March 1982.

[61] Report of the TAC Quinquennial Review Mission to the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. March 1982
[62] Report of the TAC Quinquennial Review Mission to the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. March 1982
[63] John Dillon (1978) Stripe Report, TAC Workshop on Farming Systems Research, Nairobi.
[64] Response to the Recommendations of the 1981 ILCA QQR, Annex V. In, Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[65] Report of the Second External Program Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, Food and Agriculture Organization of the United Nations. September 1986
[66] ILRAD 1984-1993: Plan for the Second Decade.
[67] Report of the Second External Program Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat, Food and Agriculture Organization of the United Nations. September 1986
[68] Report of the First External Management Review of the International Laboratory for Research on Animal Diseases. CGIAR Secretariat March 1986
[69] Report of the First External Management Review of the International Laboratory for Research on Animal Diseases. CGIAR Secretariat March 1986
[70] Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[71] TAC Interim Commentary on the Second External Program Review of ILCA. Refer to TAC letter accompanying final official version of Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[72] Table adapted from: Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[73] Anecdote source known.
[74] Table adapted from: Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[75] Table adapted from: Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[76] Table adapted from: Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[77] Report of the Second External Program Review of the International Livestock Centre For Africa (ILCA). TAC Secretariat, Food and Agriculture Organization of the United Nations. December 1987.
[78] Report of the Third External Programme and Management Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat. Food and Agriculture Organization of The United Nations. January 1993.
[79] Report of the Third External Programme and Management Review of the International Livestock Centre for Africa (ILCA). TAC Secretariat & Food and Agriculture Orgnaization [sic] of the United Nations. January 1993.

[80] Report of the Third External Programme and Management Review of the International Laboratory for Research on Animal Diseases (ILRAD). TAC Secretariat. Food and Agriculture Organization of The United Nations. January 1993.
[81] Assessment of Animal Agriculture in sub-Saharan Africa. Winrock International Institute for Agricultural Development, 1992. https://cgspace.cgiar.org/handle/10947/186
[82] Report of the Third External Programme and Management Review of the International Livestock Centre for Africa (ILCA). TAC Secretariat & Food and Agriculture Orgnaization [sic] of the United Nations. January 1993.
[83] TAC Comments on: Report of the Third External Programme and Management Review of the International Livestock Centre for Africa (ILCA). TAC Secretariat & Food and Agriculture Orgnaization [sic] of the United Nations. January 1993.
[84] Article 7.1 of the Revised Agreement between the Government of Ethiopia and the International Livestock Centre for Africa, 1992.
[85] Adapted from: Report of the Third External Programme and Management Review of the International Livestock Centre for Africa (ILCA). TAC Secretariat & Food and Agriculture Orgnaization [sic] of the United Nations. January 1993.
[86] William R. Pritchard (1991) World Bank (former Dean of the Faculty of Veterinary Medicine, University of California at Davis), personal communication to ILRAD's Peter Gardiner, February 1991. Data Sets from ILRAD. https://www.creaf.uab.es/miramon/mmr/examples/miombo/docs/database/ilrad/index.htm
[87] Jock Anderson (1994) Agricultural Technology: Contemporary and Opportunities for te World Bank. In, Jock Anderson (1994) Agricultural Technology: Policy Issues for the International Community. CAB International. Pp680.
[88] T.R. Preston and R.A. Leng (1994) Agricultural Technology Transfer: Perspectives and Case Studies Involving Livestock. In, Jock Anderson (1994) Agricultural Technology: Contemporary and Opportunities for te World Bank. In, Jock Anderson (1994) Agricultural Technology: Policy Issues for the International Community. CAB International. Pp680.
[89] Hans Binswanger (1994) Policy Issues: A View from World Bank Research. In, Jock Anderson (1994) Agricultural Technology: Contemporary and Opportunities for te World Bank. In, Jock Anderson (1994) Agricultural Technology: Policy Issues for the International Community. CAB International. Pp680.
[90] Anthony Pritchard (1994) World Bank Investment in Agricultural Research Policy and Strategy: Past and Future. In, Jock Anderson (1994) Agricultural Technology: Policy Issues for the International Community. CAB International. Pp680.
[91] John Dillon (1994) Key Issues for the International Community: A View from CGIAR Governance. In, Jock Anderson (1994) Agricultural Technology: Contemporary and Opportunities for te World Bank. In, Jock Anderson (1994) Agricultural Technology: Policy Issues for the International Community. CAB International. Pp680.
[92] The CGIAR Secretariat. Progress Report by the Working Group on Livestock Research. Agenda Item 12, Mid-Term meeting, May 23-29, 1993 , San Juan, Puerto Rico. April 19, 1993, states that: “At International Centers’ Week in 1992,the CGIAR approved Mr. Rajagopalan’s proposal to establish an ad hoc Working Group (WG) to clarify strategic issues and explore institutional options regarding the CGIAR’s support to livestock research”
[93] TAC (1992) Revised Draft Discussion Paper: Priorities and Strategies for Livestock
[94] Winrock International, “Animal Agriculture in Developing Countries: Technology Dimensions,” August 1992. And also: Winrock International, Assessment of Animal Agriculture in Sub-Saharan Africa, 1992.
[95] Presumably a draft of what appeared as: John E. Vercoe, “ILRAD and ILCA: Opportunities for Enhanced Collaboration and Cooperation,” November 1992. [reference not found]
[96] CGIAR Secretariat. Progress Report by the Working Group on Livestock Research. Agenda Item 12, Mid-Term meeting, May 23-29, 1993 , San Juan, Puerto Rico. April 19, 1993

[97] CGIAR Secretariat. Progress Report by the Working Group on Livestock Research. Agenda Item 12, Mid-Term meeting, May 23-29, 1993 , San Juan, Puerto Rico. April 19, 1993
[98] CGIAR Secretariat. Agenda Item 10, International Livestock Research in the CGIAR - Report of the Steering Committee, International Centers Week, Washington, D.C. October 25-29, 1993.
[99] TAC Secretariat (1993) Priorities and Strategies for Livestock Research in the CGIAR. FAO, April 1993.
[100] TAC Secretariat (1992) Review of CGIAR Priorities and Strategies - Parts I & II. FAO, Rome.
[101] Re-presented from: CGIAR Secretariat. Agenda Item 10, International Livestock Research in the CGIAR - Report of the Steering Committee, International Centers Week, Washington, D.C. October 25-29, 1993.
[102] Modified from: CGIAR Secretariat. Agenda Item 10, International Livestock Research in the CGIAR - Report of the Steering Committee, International Centers Week, Washington, D.C. October 25-29, 1993.
[103] Dissolution of the International Livestock Centre for Africa (ILCA) in Favour of the International Livestock Research institute (ILRI), 11th October, 1994.
[104] CGIAR Secretariat. Agenda Item 10, International Livestock Research in the CGIAR - Report of the Steering Committee, International Centers Week, Washington, D.C. October 25-29, 1993.
[105] ILCA (1994) Improving Livestock Production in Africa: Evolution of ILCA's Programme 1974–94. ILCA, Addis Ababa.
[106] Legal Notice No. 134. The Privileges and Immunities Act *(Cap.* 179) The Privileges And Immunities (International Laboratory For Research On Animal Diseases) Order, 1993. 14th May, 1993.
[107] Kaplan & Stratton letter to Director of Administration, ILRAD. 15 September 1994.
[108] Minutes of The Inaugural Meeting of the Board of Trustees of The International Livestock Research Institute. Berne, Switzerland, September 22023, 1994. Revised October 8, 1994.
[109] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.
[110] https://vslp.org/vslp/
[111] Minutes of The Inaugural Meeting of the Board of Trustees of The International Livestock Research Institute. Berne, Switzerland, September 22023, 1994. Revised October 8, 1994.
[112] Minutes of Meeting of the Board of Trustees, International Livestock Research Institute. World Bank J-Building, October 18-19, 1994. Dated October 23, 1994.
[113] Host Country Agreement Between the Transitional Government of Ethiopia and The International Livestock Research Institute, 8 July, 1995
[114] Minutes of Meeting of the Board of Trustees, International Livestock Research Institute. World Bank J-Building, October 18-19, 1994. Dated October 23, 1994.
[115] ILRI Board Meeting, February 21-25, 1995, Nairobi and Addis Ababa.
[116] Host Country Agreement Between the Transitional Government of Ethiopia and The International Livestock Research Institute, 8 July, 1995
[117] ILRI Board Meeting, February 21-25, 1995, Nairobi and Addis Ababa.
[118] ILRI Board Meeting, February 21-25, 1995, Nairobi and Addis Ababa.
[119] Minutes of Meeting of Board of Trustees, The International Livestock Research Institute. September 17-22, 1995. Addis Ababa.
[120] Minutes of Meeting of Board of Trustees, The International Livestock Research Institute. September 17-22, 1995. Addis Ababa.
[121] Minutes of Meeting of Board of Trustees, The International Livestock Research Institute. April 16-19, 1996. Nairobi.

[122] Minutes of Meeting of Board of Trustees, The International Livestock Research Institute. April 16-19, 1996. Nairobi.
[123] Minutes of Meeting of Board of Trustees, The International Livestock Research Institute. September 21-24, 1996. Addis Ababa.
[124] Terms of Reference for the First External Programme and Management Review of the International Livestock Research Institute (ILRI). Appendix III in TAC Secretariat and the Food and Agriculture Organization of The United Nations, June 2000.
[125] Cornford, F.M. (1908) Microcosmographia Academica. Metcalf, Pp15. https://www.maths.ed.ac.uk/~v1ranick/baked/micro.pdf
[126] Terms of Reference for the First External Programme and Management Review of the International Livestock Research Institute (ILRI). Appendix III in, TAC Secretariat and the Food and Agriculture Organization of The United Nations, June 2000.
[127] CGIAR Mid-Term Meeting letter transmitting the First External Programme and Management Review of the International Livestock Research Institute (ILRI). TAC Secretariat and the Food and Agriculture Organization of The United Nations, June 2000.
[128] Adapted from: ILRI (1999) ILRI Funding: Consequences of TAC Recommendations and Cahnges in CGIAR Financing.
[129] First External Programme and Management Review of the International Livestock Research Institute (ILRI). TAC Secretariat and the Food and Agriculture Organization of The United Nations, June 2000.
[130] Rockefeller Foundation (1994) A Global Livestock Research Institute for the CGIAR. Mid-Term Meeting. May 23-27, 1994. New Delhi. India. https://cgspace.cgiar.org/bitstream/handle/10947/1547/cg9405l.pdf?sequence=1&isAllowed=y
[131] https://cgspace.cgiar.org/handle/10947/4203
[132] TAC Secretariat (1993) The Ecological Approach to Research in the CGIAR.
[133] Daniel 2: 31-33; 41-43.
[134] Science Council Commentary on the Second External Program and Management Review (EPMR) of the International Livestock Research Institute (ILRI) April 2007
[135] Agenda Item 6. Proceedings of Annual CGIAR General Meeting, 6-7 December 2007
[136] CGIAR Science Council (2008) Report of the Second External Program and Management Review of the International Livestock Center (ILRI). Rome, Italy: Science Council Secretariat.
[137] Summarized and adapted from: CGIAR Science Council (2008) Report of the Second External Program and Management Review of the International Livestock Center (ILRI). Rome, Italy: Science Council Secretariat.
[138] Adapted from: CGIAR Science Council (2008) Report of the Second External Program and Management Review of the International Livestock Center (ILRI). Rome, Italy: Science Council Secretariat.
[139] Exchange of Communications between the Ministry of Agriculture and Rural Development of the Government of Ethiopia and the Chair of the Board of Trustees of ILRI, 10 August, 2007.
[140] https://hub.africabiosciences.org/aboutbeca
[141] Report of The Stripe Review of Corporate Governance of CGIAR Centers, CGIAR Committee of Board Chairs and CGIAR Secretariat. March 2006.
[142] Robinson, M. and Moyers, R. (2008) Governance CCER (Draft), March 2008
[143] Report of The Stripe Review of Corporate Governance of CGIAR Centers, CGIAR Committee of Board Chairs and CGIAR Secretariat. March 2006.
[144] CGIAR (2012) The CGIAR at 40: Institutional Evolution of the World's Premier Agricultural Research Network. Washington DC. Pp172.
[145] Third System Review of the Consultative Group on International Agricultural Research: The International Research Partnership for Food Security and Sustainable Agriculture. https://cgspace.cgiar.org/handle/10947/1586
[146] Conway, G. (2012) One Billion Hungry: Can We Feed the World? Cornell University Press.

[147] CGIAR (2012) The CGIAR at 40: Institutional Evolution of the World's Premier Agricultural Research Network. Washington DC. Pp172.
[148] CGIAR (2012) The CGIAR at 40: Institutional Evolution of the World's Premier Agricultural Research Network. Washington DC. Pp172.
[149] Lindsey, G. (1994) The CGNET Stork: A Case Study of International Networking. International Development Research Centre, Ottawa.
[150] CGIAR (1992) The CGIAR at 20, Relevance Reaffirmed. Washington, DC: CGIAR Secretariat. p 3
[151] CGIAR (2012) The CGIAR at 40: Institutional Evolution of the World's Premier Agricultural Research Network. Washington DC. Pp172.
[152] ILCA and ILRI in Ethiopia. Summary Prepared in Response to the Request of H.E. State Minister Ato Wondirad Mandefro, November 24, 2015.
[153] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.
[154] Consortium of CGIAR Centers (2012) Consortium Constitution approved June 3, 2012. www consortium.cgiar.org 26/04/12
[155] CGIAR Systemwide Livestock Programme (SLP). 2013. http://vslp.org/vslp/.
[156] ISPC White Paper. Strategic Review of Livestock in the CGIAR (including ISPC synthesis and commentary), January, 2014.
[157] ILRI (2011) CGIAR Research Program 3.7: More Meat, Milk and Fish by and for the Poor. http://livestockfish.cgiar.org/.
[158] FAO (2009) The State of Food and Agriculture: Livestock in the Balance. Rome, 180pp. http://www.fao.org/docrep/012/i0680e/i0680e00.htm.
[159] ISPC White Paper. Strategic Review of Livestock in the CGIAR (including ISPC synthesis and commentary), January, 2014.
[160] ILRI (2013) Developing and Piloting Index Based Livestock Insurance to Reduce Poverty and Vulnerability. http://www.ilri.org/indexbasedlivestockinsurance.
[161] Preparatory document for: ILCA and ILRI in Ethiopia. Summary Prepared in Response to the Request of H.E. State Minister Ato Wondirad Mandefro, November 24, 2015
[162] CGIAR (2014) Final Report from the Mid-Term Review Panel of the CGIAR Reform. https://library.cgiar.org/handle/10947/3368
[163] http://www.fao.org/policy-support/mechanisms/mechanisms-details/en/c/414443/
[164] https://cas.cgiar.org/sites/default/files/pdf/EvaluationBrief-CRP-Governance-and-Management-Review.pdf
[165] Minutes of the 44th ILRI Board Meeting, 31 October – 4 November, 2015, Washington DC.
[166] Minutes of the 45th ILRI Board Meeting, 16-20 April, 2016. Addis Ababa
[167] CGIAR Consortium (2015) CGIAR Strategy and Results Framework 2016–2030: Redefining How CGIAR Does Business until 2030. Montpellier.
[168] Minutes of the 45th ILRI Board Meeting, 16-20 April, 2016. Addis Ababa
[169] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.
[170] Opportunities Unlimited B.V. and Eenhoorn Services (2018) Proposal to investigate the business case for an enhanced collaboration or alliance between WorldFish and the International Livestock Research Institute.
[171] Integrating the Proposals of the Board Chairs and the System Reference Group, a response from Board Chairs and Directors-General to the SRG final report of 28 October 2019
[172] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G.

Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.

[173] CGIAR. Unified Governance and Integrated Operational Structure: One CGIAR implementation pathways. Key themes for Center/Alliance Board endorsement by no later than 20 January 2020 . Version: 20 December 2019

[174] The Constitution of the International Livestock Research Institute (revised and approved by the ILRI Board of Trustees 25 September 2020).

[175] ILRI Board Document for discussion with One CGIAR, 15 January 2021

[176] Apparently based on the Draft ISO 37000 (draft only as the final approval was not to be considered by ISO until 2021)

[177] Proposal by Lalive on behalf of One CGIAR based on Draft ISO 3700

[178] Minutes of the 49th ILRI Board of Trustees Meeting, 21-25 April, 2018, Addis Ababa

[179] Minutes of the 50th ILRI Board of Trustees Meeting, 20-24 October, 2018. Nairobi

[180] Minutes of the 52nd ILRI Board of Trustees Meeting, 25-31 October, 2019, Nanjing China

[181] https://cgspace.cgiar.org/handle/10568/109757

[182] Minutes of the 54th ILRI Board of Trustees Meeting, 20 July 2020. Extraordinary Meeting (Virtual)

[183] Minutes of the 55th ILRI Board of Trustees Meeting, 8-9 September, 2020. (Virtual)

[184] 56th ILRI Board of Trustees meeting, 23 and 25 September 2020

[185] Introductory remarks from the Chair, 56th ILRI Board of Trustees meeting, 23 and 25 September 2020

[186] 12th System Council Meeting, 3-4 March 2021. Chair's Summary, SC12 Issued: 17 March 2021

[187] Response from ILRI to the 18 November 2020 draft CGIAR Research and Innovation Strategy

[188] ILRI Board Papers, Director General's Report, for presentation in April 2021

[189] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.

[190] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? Chapter 17 in: Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.

[191] Derek Byerlee and John K. Lynam (2020) The Invention of the International Agricultural Research Center Model and the CGIAR System. Feb 26, 2020. https://www.researchgate.net/publication/343442926_The_Invention_of_the_International_Agricultural_Research_Center_Model_and_the_CGIAR_System

[192] Renkow, M., & Byerlee, D. evidence. Food policy, 35(5), 391-402. 2010). The impacts of CGIAR research: A review of recent

[193] Walker, T. S., & Alwang, J. (eds). (2015). Crop improvement, adoption and impact of improved varieties in food crops in sub-Saharan Africa. Wallingford, UK: CAB Int. 94

[194] TAC Secretariat. (1991). An ecoregional approach to research in the CGIAR. Rome, Italy: TAC Secretariat.

[195] Jock Anderson (1994) Agricultural Technology: Contemporary and Opportunities for te World Bank. In, Jock Anderson (1994) Agricultural Technology: Policy Issues for the International Community. CAB International. Pp680.

[196] T.R. Preston and R.A. Leng (1994) Agricultural Technology Transfer: Perspectives and Case Studies Involving Livestock. In, Jock Anderson (1994) Agricultural Technology: Contemporary and Opportunities for te World Bank. In, Jock Anderson (1994) Agricultural Technology: Policy Issues for the International Community. CAB International. Pp680.

[197] Guiding principles of good governance. http://www.companydirectors.com.au/~/media/resources/director-resource-centre/governance-and-director-issues/guiding-principles-of-good-corporate-governance.ashx?la=en
[198] Falvey, L. (2020) Agriculture & Philosophy: Agricultural Science in Philosophy. Thaksin University Press. Pp321.
[199] Albert O. Hirschman and C. E. Lindbolm, Economic Development, Research and Development, Policy Making: Some Converging Views, 1962. Reprinted in Albert O. Hirschman, Rival Views of Market Society, 1986, p. 10)
[200] Ben-Artzi, R. (2016). Multilateral Governance: Theoretical and Empirical Underpinnings. In Regional Development Banks in Comparison: Banking Strategies versus Development Goals (pp. 41-62). Cambridge: Cambridge University Press. https://www.cambridge.org/core/books/regional-development-banks-in-comparison/multilateral-governance-theoretical-and-empirical-underpinnings/A3E1BAEF90ADB75C29FA1545F704989C
[201] The OECD Principles of Corporate Governance. Originally published by the OECD in English and French under the titles: Policy Brief: The OECD Principles of Corporate Governance, 2004. http://www.oecd.org/corporate/ca/corporategovernanceprinciples/31557724.pdf
[202] Joseph L. Bower (1997) Effective Public Management. Harvard Business Review. https://hbr.org/1977/03/effective-public-management
[203] Jason Harris (2021) Company directors can't serve two masters. https://theconversation.com/company-directors-cant-serve-two-masters-what-went-wrong-at-australia-post-158525?utm_medium=email&utm_campaign=Latest... 1/5 April 8, 2021 6.42pm AEST
[204] Matthew 6:24
[205] McCalla, A. (2014) CGIAR Reform-Why So Difficult? Review, Reform, Renewal, Restructuring, Reform Again and then "The New CGIAR "- So Much Talk and So Little Basic Structural Change-- Why? Working Paper No. 14-001. Department of Agricultural and Resource Economics University of California, Davis. Pp56.
[206] Principles of Corporate Governance. Posted by Business Roundtable, on Thursday, September 8, 2016. https://corpgov.law.harvard.edu/2016/09/08/principles-of-corporate-governance/
[207] Coase, Ronald, 1991, "The nature of the firm" in O. Williamson and S. Winter (eds.), The Nature of the Firm, Oxford University Press, Oxford.
[208] Luisa Moretto (2005) Urban Governance and Informal Water Supply Systems: Different Guiding Principles Amongst Multilateral Organisations. Conference on the Human Dimension of Global Environmental Governance 'International Organisations and Global Environmental Governance, Berlin, 2-3 December 2005
[209] R. Jessop(2002) Liberalism, Neoliberalism, and Urban Governance: A State-Theoretical Perspective. Blackwell. Pp. 472.
[210] Tribe, D.E. (1991) Doing Well by Doing Good: Agricultural Research: Feeding and Greening the World. Pluto Press in association with The Crawford Fund for International Agricultural Research. Pp135.
[211] ILRI (2020) The Impact of the International Livestock Research Institute. Edited by John McIntire and Delia Grace. Nairobi, Kenya: ILRI, and Wallingford, UK: CABI
[212] ILRI (2020) The Impact of the International Livestock Research Institute. Edited by John McIntire and Delia Grace. Nairobi, Kenya: ILRI, and Wallingford, UK: CABI
[213] The CGIAR at 40: Institutional Evolution of the World's Premier Agricultural Research Network. https://cgspace.cgiar.org/bitstream/handle/10947/2761/cgiar40yrs_book_final_sept2012.pdf?sequence=1&isAllowed=y

[214] World Bank. (2003). The CGIAR at 31: An independent meta-evaluation of the Consultative Group on International Agricultural Research. Washington, DC: The World Bank
[215] McCalla, A. (2017) The Relevance of the CGIAR in a Moderizing World: Or has it been reformed ad infinitum into dysfunctionality? In Pingali, P. and Feder, G. Agriculture and Rural Development in a Globalizing World: Challenges and Opportunities. Routledge.
[216] Ron Srigley (2018) Whose University Is It Anyway? https://lareviewofbooks.org/article/whose-university-is-it-anyway/
[217] Gertrude Himmelfarb (2004) The Roads to Modernity: The British, French and American Enlightenments. Knopf. Pp276
[218] https://www.csiro.au/en/About/Leadership-governance/Minister-and-Board/Statement-of-Expectations
[219] https://www.mbie.govt.nz/science-and-technology/science-and-innovation/agencies-policies-and-budget-initiatives/research-organisations/cri/
[220] https://www.cgiar.org/how-we-work/governance/ accessed 28 January 2021.
[221] Julian Alston, George Norton and Philip Pardey (1995) Science Under Scarcity: Principles and Practice for Agricultural Research Evaluation and Priority Setting. Cornell University Press. Pp585.
[222] Julian M. Alston, Philip G. Pardey, and Xudong Rao (2020) The Payoff to Investing in CGIAR Research. SoAR Foundation. Pp177.
[223] Derek Byerlee and John K. Lynam (2020) The Invention of the International Agricultural Research Center Model and the CGIAR System. Feb 26, 2020. https://www.researchgate.net/publication/343442926_The_Invention_of_the_International_Agricultural_Research_Center_Model_and_the_CGIAR_System
[224] McCalla, A. (2014) CGIAR Reform-Why So Difficult? Review, Reform, Renewal, Restructuring, Reform Again and then "The New CGIAR "- So Much Talk and So Little Basic Structural Change-- Why? Working Paper No. 14-001. Department of Agricultural and Resource Economics University of California, Davis. Pp56.
[225] McCalla, A. (2017) The Relevance of the CGIAR in a Modernizing World: Or has it been reformed ad infinitum into dysfunctionality? In, Pingali, P. and Feder, G. (2017) Agriculture and Rural Development in a Globalizing World: Challenged and Opportunities. Routledge.
[226] Westad, O. A. (2017) The Cold War: A World History. Penguin Random House. Pp710.
[227] Public Papers of the Presidents: John F. Kennedy 1961, 135. 1 March 1961 statement.
[228] Conference on Security and Co-Operation in Europe: Final Act (1976) American Journal of International Law 70(2): 417–21.
[229] Morten Bøås and Desmond McNeill (2003) Multilateral Institutions: A Critical Introduction. Pluto Press. Pps 208. https://www.jstor.org/stable/j.ctt18fs8d2
[230] Helge Ole Bergesen and Leiv Lunde (1999) Dinosaurs Or Dynamos?: The United Nations and the World Bank at the Turn of the Century. Earthscan. Pp226.
[231] Colin Legum (1999) Africa Since Independence. Indiana University Press. Pp120.
[232] Chenery (1974): xiii http://pubdocs.worldbank.org/en/847371404939885255/wbg-archives-1651487.pdf
[233] Meadows, Donella H; Meadows, Dennis L; Randers, Jørgen; Behrens III, William W (1972). The Limits to Growth; A Report for the Club of Rome's Project on the Predicament of Mankind. New York: Universe Books.
[234] M. Grindle (2001) Despite the Odds: The Political Economy of Social Sector Reform in Latin America. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=284013
[235] Julian M. Alston, Philip G. Pardey, and Xudong Rao (2020) The Payoff to Investing in CGIAR Research. SoAR Foundation. Pp177.
[236] Morten Bøås and Desmond McNeill (2003) Multilateral Institutions: A Critical Introduction. Pluto Press. Pps 208. https://www.jstor.org/stable/j.ctt18fs8d2